SEPTEMBER 26, 1942

Railway Age

Founded in 1856

Sec 31

"IT CAN'T BE DONE!" BUT, *Here It Is!*

IT didn't seem possible to some people, — but officials of the Great Northern had no doubts about the future of GM Diesels in freight service, as it was the second railroad to purchase this type of power. The performance of their 2700-hp. Diesel No. 5600, operating between Great Falls and Butte (170 miles) is outstanding, as evidenced by the following comparisons with steam locomotives previously used.

- Diesel has increased maximum tonnage on 2.2 per cent grade from 950 to 1400 . . . more than 47 per cent and with a reduction in running time of four hours in each direction.
- In 62 days of operation, Diesel saved 20 round trips, or 6800 train miles; also saved 36 helper trips, or 2103 helper miles.
- Helper service entirely eliminated on a 54-mile district and reduced 50 per cent on a 10-mile district.
- Maximum elevation 6354 ft. . . . Temperature range from 95° above zero to 40° below zero and lower. GM Diesel efficiency not affected by altitude or extreme temperatures.
- 10 tunnels — two longest are 1283 ft. (2.2 per cent grade) and 6145 ft.
- GM Diesel operation eliminates hazard of smoke and gas; also less disintegration of tunnel roofs.
- Diesel eliminates fire hazard along right of way.
- Total of 379 curves:—majority on heavy grades up to 2.2 per cent. GM Diesel locomotives, with their uniformly applied power, very definitely reduce wear and tear on rail and bridge structures, and allow operation in territories and at speeds not permissible with heavy steam power. To even approach this Diesel performance with steam would require an expenditure of $343,000 for reinforcing bridges, enlarging tunnels, and installing new turntable, an amount considerably more than the cost of the Diesel.

TRANSPORTATION IS VITAL FOR VICTORY

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Central Serial Record
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SEP 30 1942
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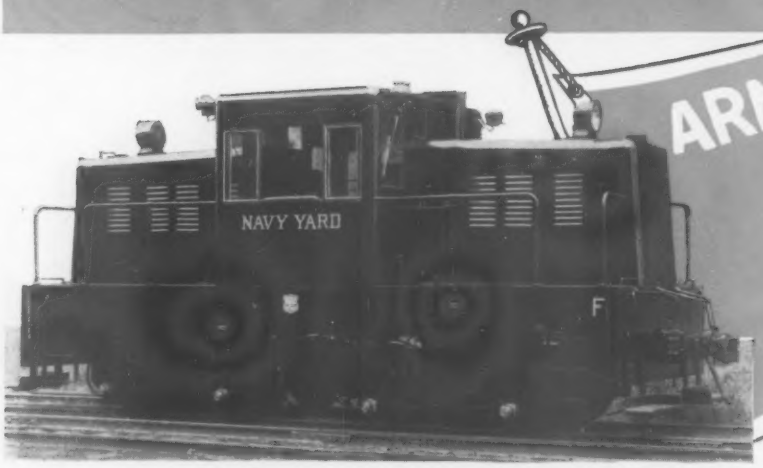
GREAT NORTHERN

GENERAL MOTORS LOCOMOTIVES

ELECTRO-MOTIVE DIVISION

GENERAL MOTORS CORPORATION — LA GRANGE, ILLINOIS, U.S.A.

Serving the ARMY and NAVY as well as INDUSTRIAL PLANTS



H. K. Porter Company was one of the first companies to receive the Army-Navy Award for high achievement in production.

A typical 50-ton Diesel Electric for Navy Yards.

One of the many Diesel Electric Locomotives supplied to the U. S. Army. Illustration shows one of 65 tons.

A 50-ton Porter Steam Locomotive designed for the U. S. Army.

H. K. Porter Company, Inc., has been building locomotives for more than 75 years. Men who know locomotive efficiency have always respected Porter engineering skill and Porter construction methods — they know that Porter locomotives move MORE tons at LESS cost.

Our fighting forces are using Porter locomotives for all types of haulage. If you are about to make the capital investment necessary in purchasing a switching locomotive let Porter engineers recommend type and size best suited to your specific needs. Only Porter builds a complete line of locomotives for industry.

Only PORTER Builds a Complete Line of Locomotives for Industry

H. K. PORTER COMPANY, INC.

PITTSBURGH PENNSYLVANIA

Published weekly by Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 1933, at the Post Office at Philadelphia, Pa., under the act of March 3, 1879. Subscription price $6.00 for one year U. S. and Canada. Single copies, 25 cents each. Vol. 113, No. 13.

CONSERVE STEEL
For Our Fighting Forces

Foresighted management now is doing everything possible to conserve the steel already in service, making it last so that all new steel can go into America's war effort.

Preventing corrosive destruction is one effective way to conserve steel and help fight the war on the home front. The initial step is to critically examine all buildings and equipment—bridges, columns, trusses, floors, stairs, roofing, siding, ventilators, ducts, piping, tanks, fences, cranes, machinery, etc.—everything made of steel that is subject to corrosion from dampness, the weather or process fumes.

Paint manufacturers can offer good advice on effective methods of cleaning, and on primer and finish coats that will protect and conserve steel in and about your plant. A program to preserve steel has a valuable secondary advantage, too. Many shades of paint reflect light, and better lighting cuts spoilage, speeds production and reduces the hazards of accidents to America's war workers.

A conservation program more than pays for itself in lower maintenance and replacement costs, but more important now, every pound of steel that is saved is a boost to the war effort.

SHEETS · STRIP · TIN PLATE · BARS · PLATES · FLOOR PLATE · STRUCTURALS · PILING
RAILS · TRACK ACCESSORIES · REINFORCING BARS

Dedicated to Victory

INLAND STEEL CO.

38 S. Dearborn Street, Chicago • Sales Offices: Milwaukee, Detroit, St. Paul, St. Louis, Kansas City

FOR VICTORY TODAY
AND SOUND BUSINESS TOMORROW

Get This Flag Flying Now!

This War Savings Flag which flies today over companies, large and small, all across the land means *business.* It means, first, that 10% of the company's gross pay roll is being invested in War Bonds by the workers voluntarily.

It also means that the employees of all these companies are doing their part for Victory . . . by helping to buy the guns, tanks, and planes that America and her allies *must* have to win.

It means that billions of dollars are being diverted from "bidding" for the constantly shrinking stock of goods available, thus putting a brake on inflation. And it means that billions of dollars will be held in readiness for post-war readjustment.

Think what 10% of the national income, saved in War Bonds now, month after month, can buy when the war ends!

For Victory today . . . and prosperity *tomorrow,* keep the War Bond Pay-roll Savings Plan rolling in *your* firm. Get that flag flying now! Your State War Savings Staff Administrator will gladly explain how you may do so.

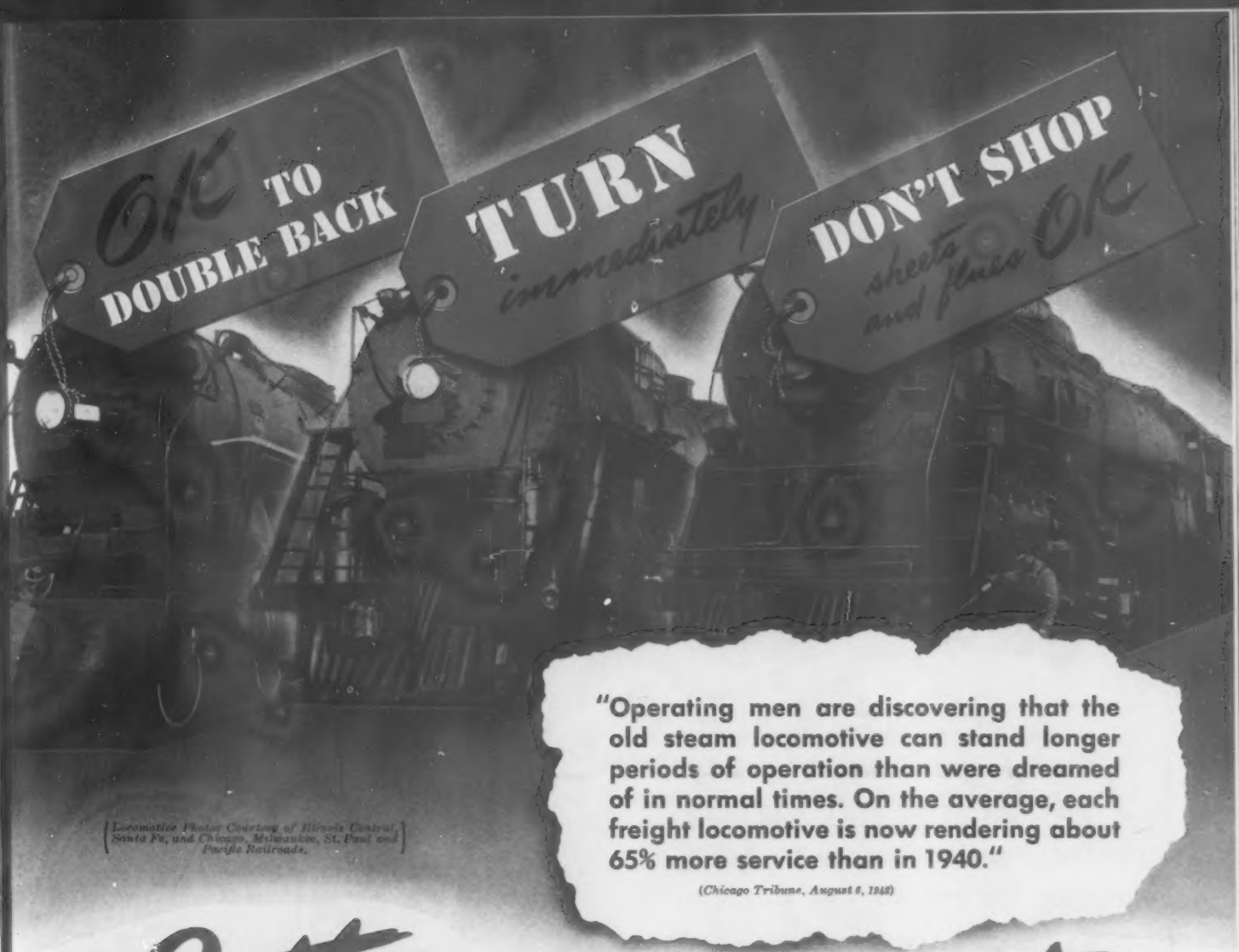
If your firm has not already installed the Payroll Savings Plan, *now is the time to do so.* For full details, plus samples of result-getting literature and promotional helps, write or wire: War Savings Staff, Section F, Treasury Department, 709 Twelfth Street NW., Washington, D. C.

EVERYBODY EVERY PAYDAY AT LEAST 10%

Save With
War Savings Bonds

This Space Is a Contribution to America's All-Out War Program by

RAILWAY AGE



[Locomotive Photos Courtesy of Illinois Central, Santa Fe, and Chicago, Milwaukee, St. Paul and Pacific Railroads.]

"Operating men are discovering that the old steam locomotive can stand longer periods of operation than were dreamed of in normal times. On the average, each freight locomotive is now rendering about 65% more service than in 1940."

(*Chicago Tribune, August 6, 1945*)

Better Water Treatment...

ACCOUNTS FOR MUCH OF THE INCREASED SERVICE BETWEEN SHOPPINGS

How to move more men and materials with existing locomotives is a problem. Operating men are discovering that the capacity for much greater efficiency in the locomotives they already have lies in proper treatment of the boiler water. Bagged flues, blistered sheets, leaky flues and bolts, and flue and fire box renewals, due to the use of bad water or improperly treated water, cannot be tolerated. Better water treatment . . . Dearborn Water Treatment to be specific . . . conditions water so that immediate turning and doubling back are general practice. Over 200 railroads are benefiting by using this service.

The recent announcement of a Dearborn Anti-Foam that is substantially non-saponifiable and non-hydrolyzable is the latest contribution toward greater locomotive efficiency. The Dearborn Engineer in your territory is equipped to demonstrate this new anti-foam and explain its numerous advantages. He will be glad to work with you and help you to solve all of your water problems, enabling you to set new endurance records for your present locomotives.

DEARBORN CHEMICAL COMPANY

310 S. Michigan Ave., Chicago
205 E. 42nd St., New York
807-15 Mateo St., Los Angeles
2454 Dundas St., West, Toronto

Dearborn

TRADE MARK REGISTERED

SCIENTIFIC WATER TREATMENT

A 1,000,000 VOLT "CANDID CAMERA"

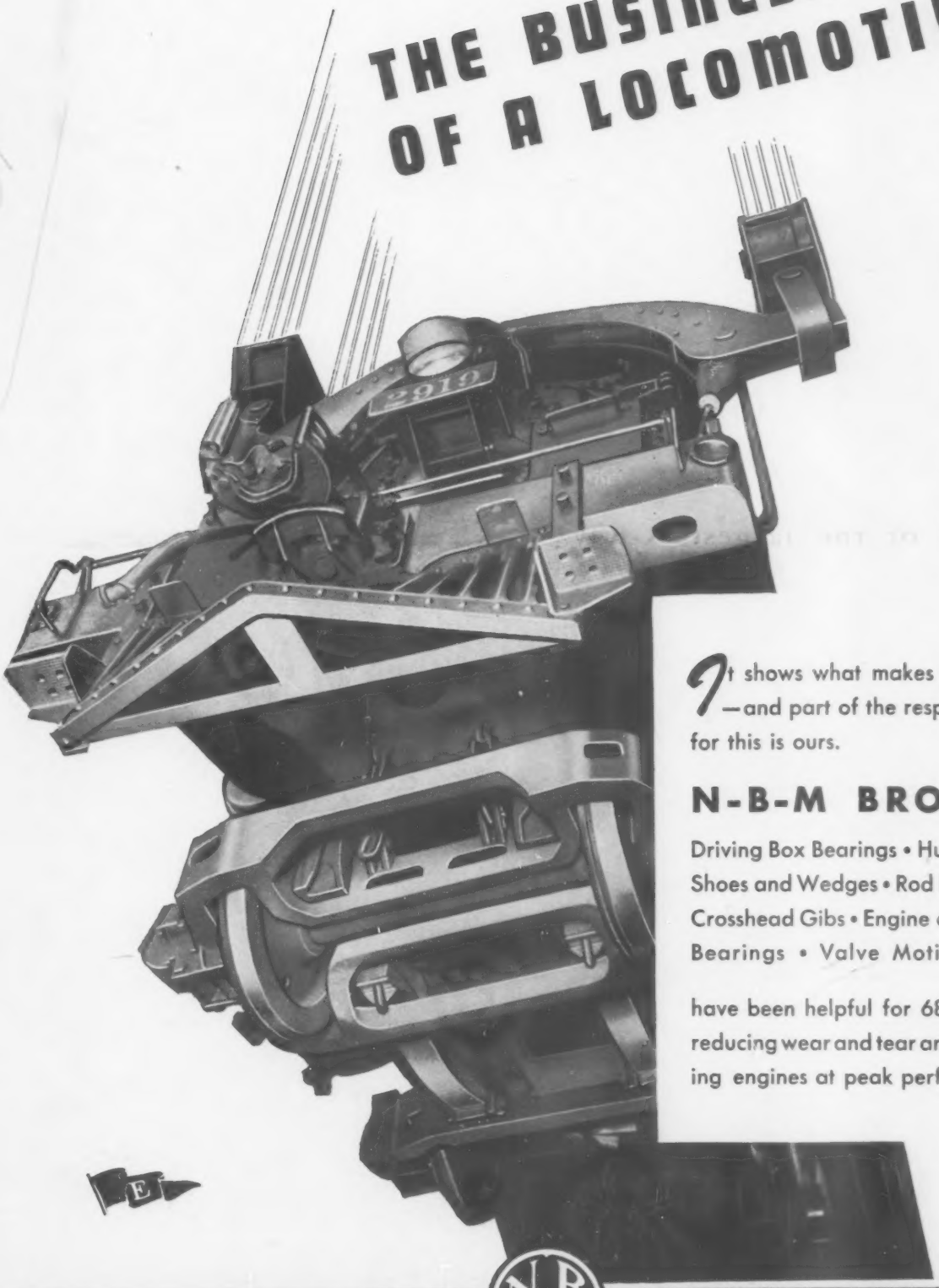
ONE of the largest X-Ray machines ever built has been installed by the American Steel Foundries for use in the production of steel castings. This 1,000,000 volt machine produces photographs that are "candid"—that reveal minute hidden defects, if any exist.

This machine is typical of the progress in research being made by the American Steel Foundries. The developments in steel castings now being made to meet the high standards of the Army and Navy will be available in the production of railway steel castings when the war is won.

After adjusting this powerful equipment the operator retires through a series of baffle walls (each 18" in thickness) to another room, where the operating switchboard is located.

AMERICAN STEEL FOUNDRIES

THE BUSINESS END OF A LOCOMOTIVE



It shows what makes her "tick"—and part of the responsibility for this is ours.

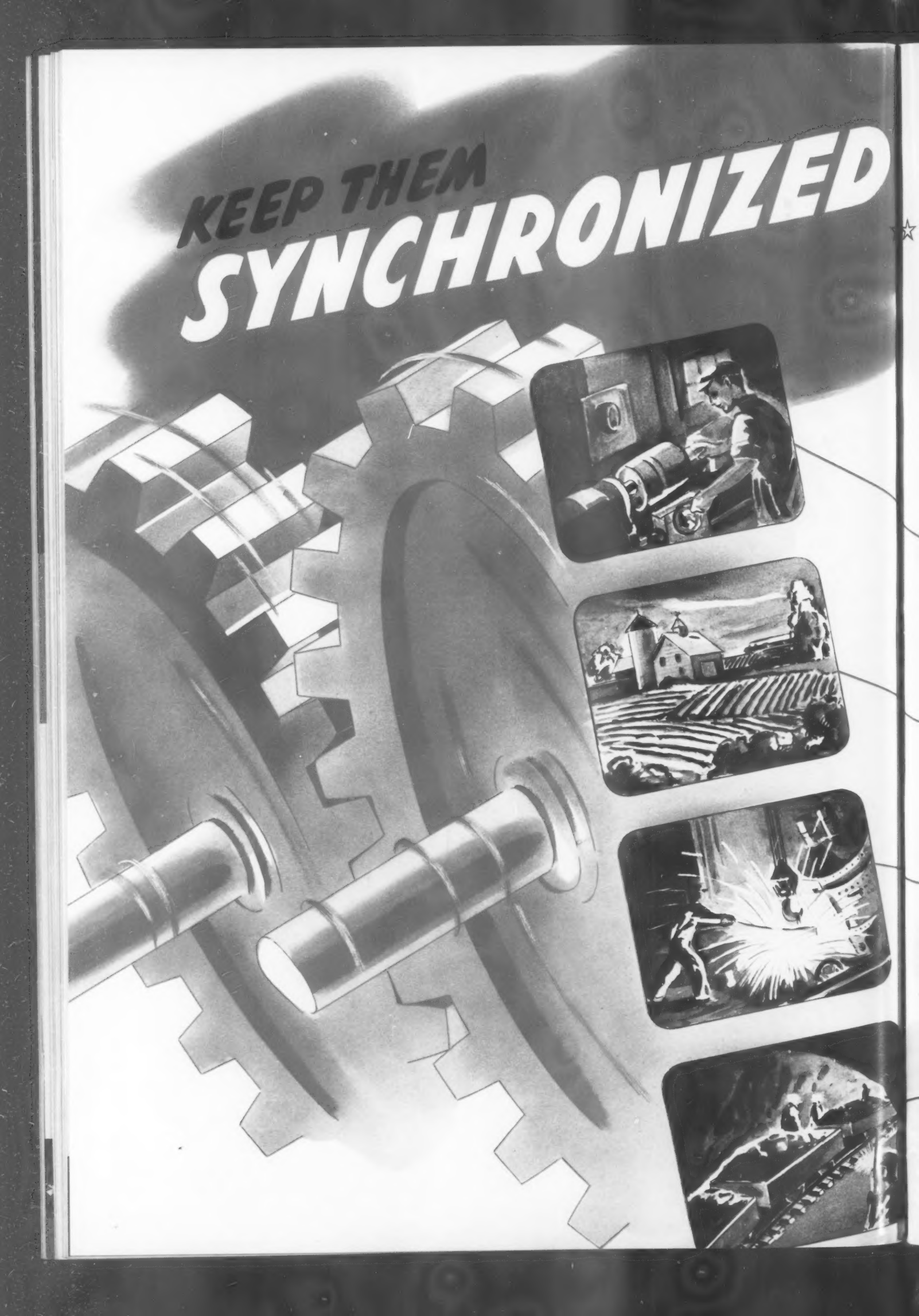
N-B-M BRONZE

Driving Box Bearings • Hub Plates • Shoes and Wedges • Rod Bushings • Crosshead Gibs • Engine and Truck Bearings • Valve Motion Parts

have been helpful for 68 years in reducing wear and tear and in keeping engines at peak performance.

NATIONAL BEARING METALS CORPORATION

ST. LOUIS • NEW YORK


KEEP THEM
SYNCHRONIZED

☆ ☆ it's vital for victory!

Speed at the lathe . . . and speed on the farm. Speed in the mill . . . and speed in the mine. Now, with the whole nation driving at top speed, the railroads must bear the brunt of moving the most colossal output of munitions any nation ever even attempted to produce!

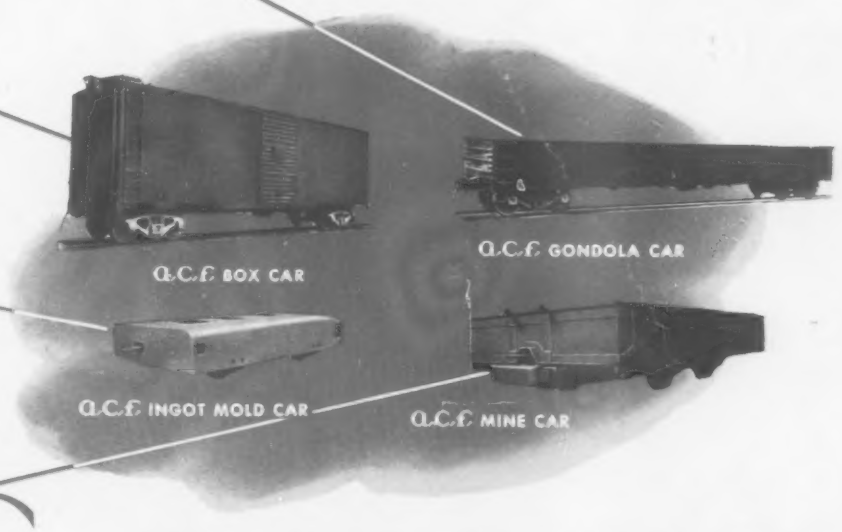
Since June, 1940, freight ton-miles have increased 70%. In World War I; a 12% increase in freight ton-miles brought 72,500 new freight cars to meet it. Yet today a 70% increase — a six-times greater increase — is being currently met with only 87,000 new railroad-owned cars.

This is eloquent testimony to the success with which improved railroad facilities and improved operating methods are now being employed in the effort to get the utmost service out of every piece of rolling stock now on the rails.

The months to come may call for redoubled effort and attention to every detail on the part of every railroad man. They may call for more and more efficient use of cars by shippers and receivers of freight. But, whatever the call, it will be met — for the wheels of the railroads must be kept synchronized with the rising tempo of the wheels of industry!

* * *

For many years the American Car and Foundry Company has served as a principal source of supply to the railroads, and has taken part in many of the most notable advances that have been made in the design and construction of rolling stock. It now offers every facility in its power to aid in making certain that the vital flow of munitions continues ever faster and faster.

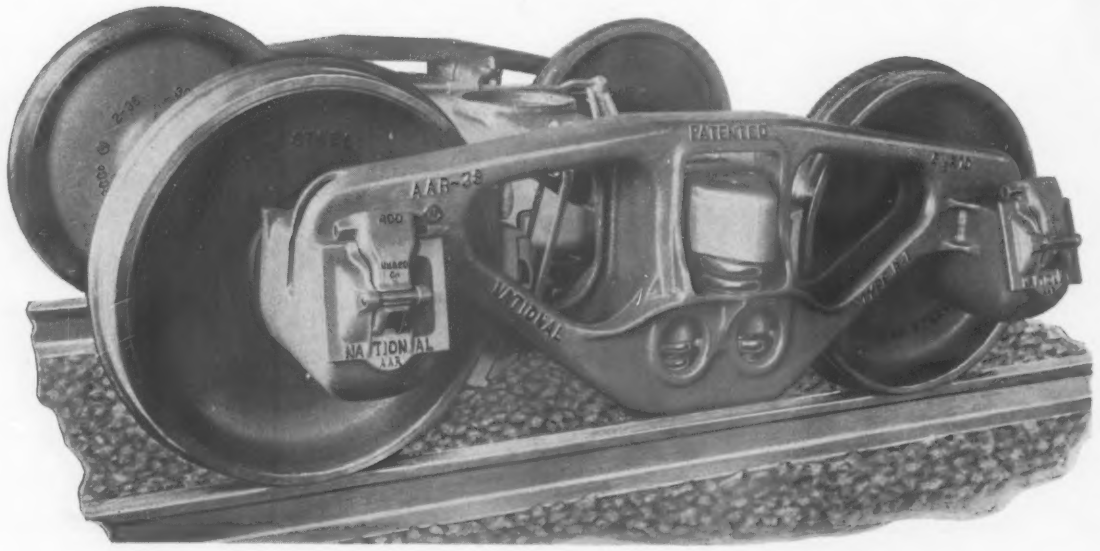


a.c.f.

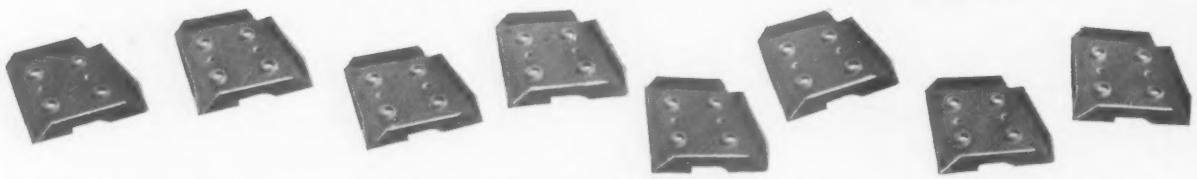
AMERICAN CAR AND FOUNDRY CO.

NEW YORK, CHICAGO, ST. LOUIS, CLEVELAND, PHILADELPHIA, PITTSBURGH, ST. PAUL, SAN FRANCISCO

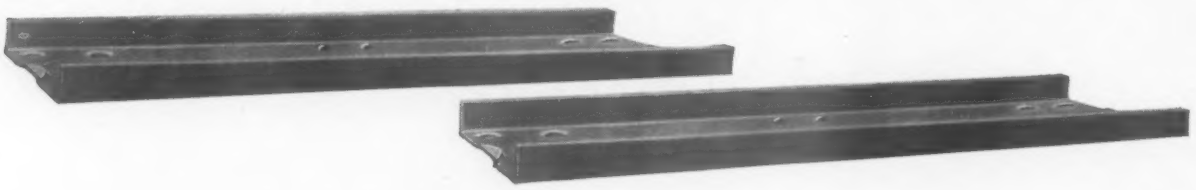
NATIONAL B-1 TRUCKS
with
DUAL CONTROL



Save Weight, Time and Expense



A. A. R. Standard Springs used in National B-1 Trucks are held firmly in position in the side frame, and the Eight spring retaining plates (illustrated above) used in other types of trucks are eliminated.



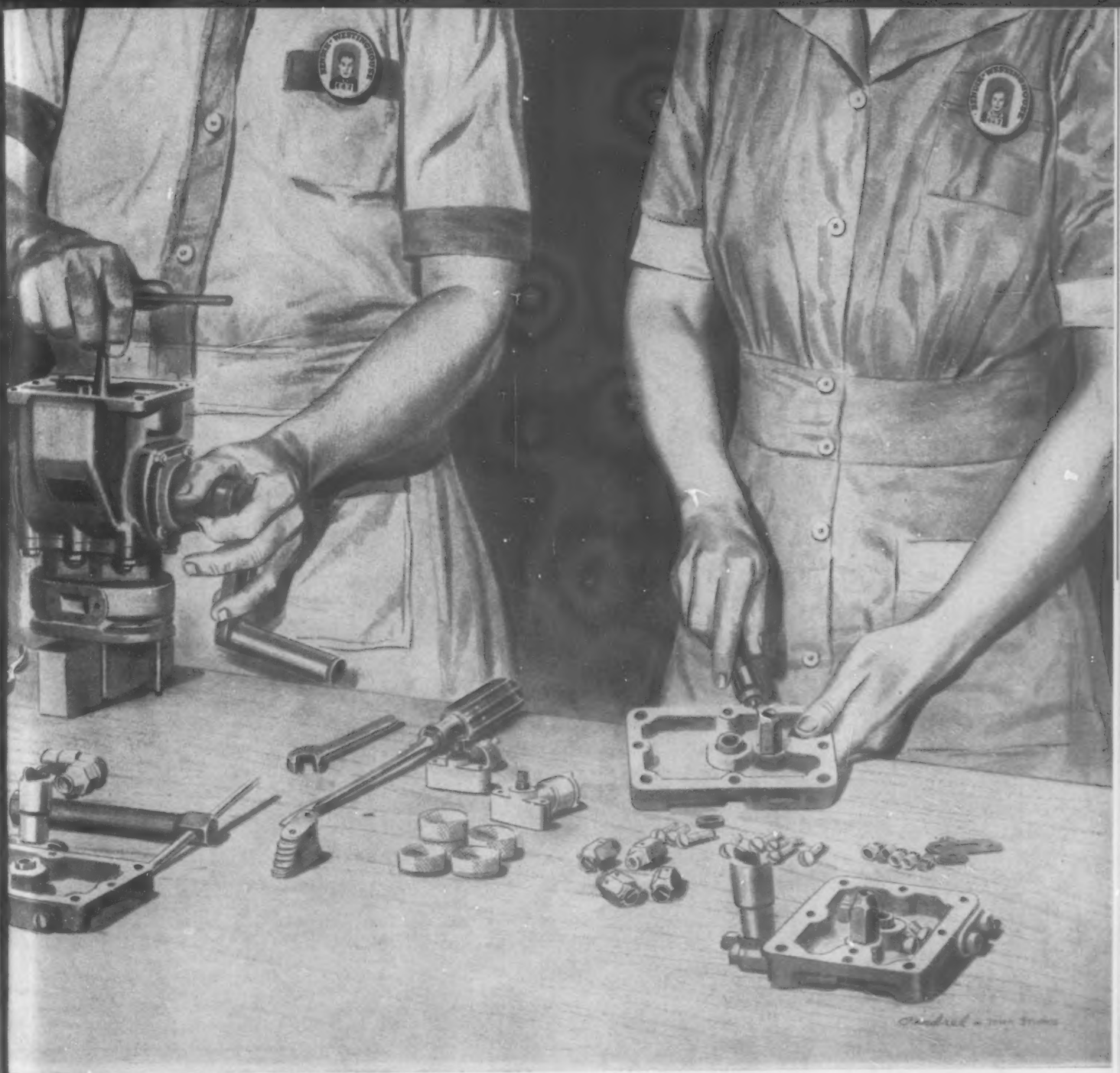
Two Spring Planks per car are also eliminated—At least 500 lbs. of vital steel per car are saved by elimination of the items shown.

Built-in Friction Controls make the usual snubbers unnecessary.

They meet all A.A.R. requirements.

NATIONAL MALLEABLE AND STEEL CASTINGS CO.
General Offices: CLEVELAND, OHIO
Sales Offices: New York, Philadelphia, Chicago, St. Louis, San Francisco
Works Cleveland, Chicago, Indianapolis, Sharon, Pa., Melrose Park, Ill.

Canadian Representatives: RAILWAY AND POWER ENGINEERING CORPORATION, LTD., *Toronto and Montreal*



NIECES, NEPHEWS AND AIR BRAKES

There's nothing unusual about this combination if you know Bendix-Westinghouse. In one of the Nation's most modern industrial structures, comprising the most advanced methods and equipment, works one big happy family whose watchword is "Keep 'em Rolling!" Around the clock, hundreds of real Americans . . . all nieces and nephews of our own Uncle Sam, build genuine Bendix-Westinghouse Air Brakes and Air Control Equipment ★ Fully aware of the indispensable role Bendix-Westinghouse Equipment plays in the war effort, here's one group who'll be in there pitching until the job is done ★ As you can depend upon Bendix-Westinghouse personnel, no small portion of which inherits a skill which is a natural attribute to second and third generations engaged in the manufacture of devices which must not fail, so can you depend upon genuine Bendix-Westinghouse Air Brakes and Air Control Devices ★ A nation-wide chain of Authorized Distributors carries traditional Bendix-Westinghouse safety, dependability, and economy to you . . . Your telephone directory will give you the address it will pay you to know.

BENDIX-WESTINGHOUSE AUTOMOTIVE AIR BRAKE CO.
ELYRIA, OHIO

AN ORGANIZATION WHOSE UNDIVIDED EFFORT AND COMPLETE RESOURCES

ARE DEVOTED TO YOUR CONVENIENCE AND SAFETY

NEWS from the scrap front

TIPS FROM OTHER "WASTE WARDENS" THAT MAY HELP YOU DO A BETTER JOB OF "GETTING IN THE SCRAP"

★ ★ ★

OLD AXLES MAKE NEW SHAFTS—A Pennsylvania mining company gets top salvage value out of its broken and obsolete locomotive axles by machining them down to make replacement shafts for motors and generators. The turnings make excellent scrap for mill use . . . *Are you making full use of salvaged material to help you solve your parts replacement problems?*

WESTERN ROAD DOUBLES SCRAP IN 1942—By salvaging abandoned tracks, scrapping obsolete equipment, combing inactive stocks, and making every employee a "scrapper", a large western railroad is sending nearly 100% more metal scrap to mills this year than last. Its president recently toured every mile of the line to speed movement of scrap, and he expects 1942 salvage on the road to reach 250,000 tons . . . *Is your scrap campaign geared up to meet war needs?*

VETERAN WEAPONS DRAFTED AGAIN—This old Gatling gun and German "dud" torpedo from World War I were recently volunteered for scrap by a midwest railroad man, along with several smaller weapons. When cut up in the scrap yard, the torpedo yielded over 1000 pounds of steel and the gun about 500 pounds of brass and steel . . . *Are you making all your employees "scrap conscious"?*

THE SCRAP IS COMING IN...*but not fast enough!*

Railroads have always been good "scrappers," but today's urgent need for war materials calls for even better salvage performance. Heretofore, scrap campaigns have been motivated by economy and efficiency. Now you must add another motive—national necessity.

So enlist your personal effort and ingenuity in the scrap drive. Explore new fields of scrap supply—steel binding bands left in cars, rust from steel plates, discarded fence and metal parts from along your right-of-way, belt-drive equipment from ceilings of shops now converted to motor drive, etc. Constantly investigate inactive stocks. Don't miss a trick.

Industry is cooperating in the drive for scrap. But steel mills must get more if they are to meet the gigantic needs of war production. See that your salvage campaign is a continuous clean-sweep!

UNITED STATES

NEBRASKA HITS THE JACKPOT—To stimulate scrap collection throughout Nebraska, an Omaha newspaper sponsored a $2000 contest. Results were amazing. 135 million pounds of scrap was turned in—about 103 pounds per capita—setting a new pace for the nation . . . *Have you tried an incentive system to step up scrap collection on your lines? In communities you serve?*

"PAINLESS EXTRACTION" OF CAR RAILS—This new rail remover can pull up 4000 lineal feet of street car rail a day, its designers say. Besides speeding salvage, it reduces damage to pavement and simplifies repaving. 60,000 tons of rail in New Jersey are being removed with this type of machine . . . *Are communities along your lines equipped to salvage rails economically?*

CAREFUL SORTING INCREASES SCRAP VALUE—An eastern railroad gets maximum value out of its salvaged metals by using the "spread system" of handling scrap. All scrap is delivered to one central depot, where it is sorted by metal experts. About one-third usually is found to have further utility and is held for reconditioning. The other two-thirds is shipped at once for remelting . . . *Are you equipped for thorough classification and quick shipment of your scrap?*

WE "PRACTICE WHAT WE PREACH" — In one of many salvage operations, a U. S. Steel subsidiary recently dismantled for scrap several of its own mill buildings no longer suited to present steel-making practices. The yield was 3500 tons of steel scrap . . . *Do you have any steel structures, idle now and of doubtful future value, which should be scrapped?*

SEGREGATION
is increasingly important!

Wherever possible, sell your scrap in lots that have been carefully segregated, classified and labeled according to their type and metallic make-up. By making it easy for steel mills to identify accurately the alloy content of your machinings and other scrap, you help speed production of war steels and make possible full utilization of critical alloys much of your scrap contains. Scrap that is sorted and prepared will bring you a substantially better price, too.

AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York* · CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago* · COLUMBIA STEEL COMPANY, *San Francisco* · NATIONAL TUBE COMPANY, *Pittsburgh* · TENNESSEE COAL, IRON & RAILROAD COMPANY, *Birmingham*

USS

STEEL

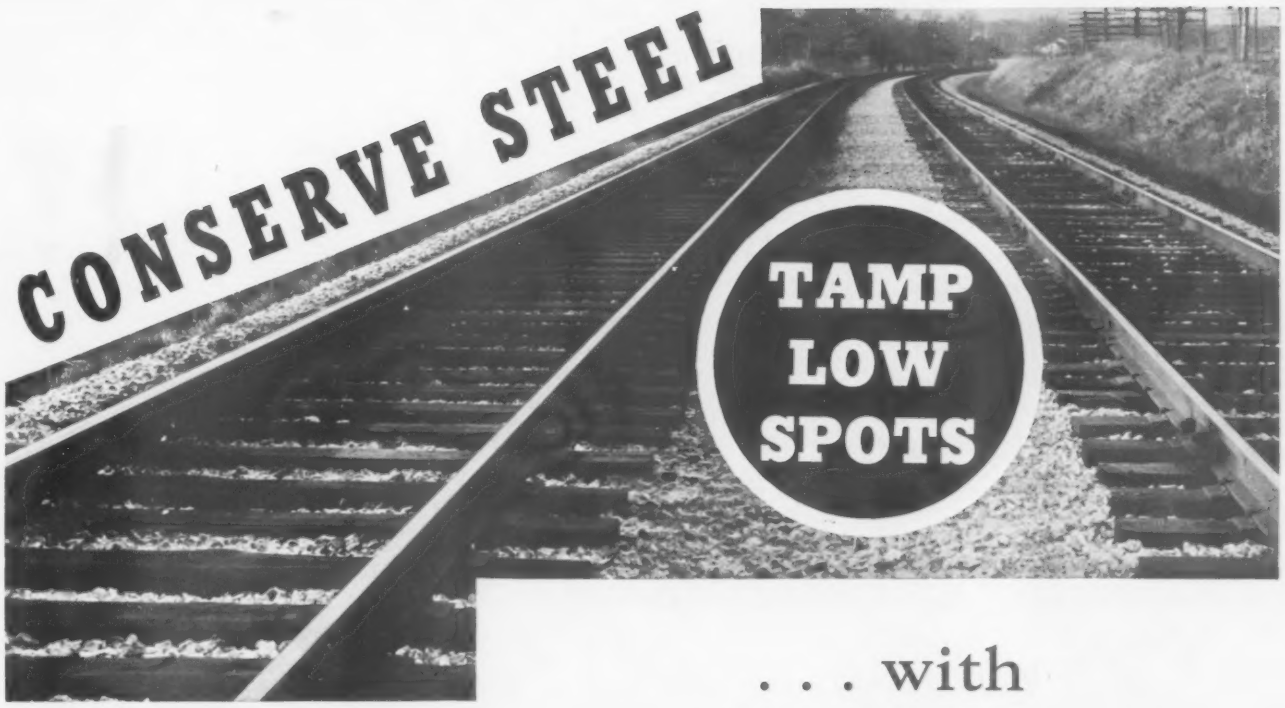
COME ON — AMERICA!

SALVAGE
IRON & STEEL SCRAP
★

The Colorado Fuel and Iron Corporation

Makers of CF&I RAIL AND FASTENINGS

GENERAL OFFICES: DENVER, COLORADO



. . . with

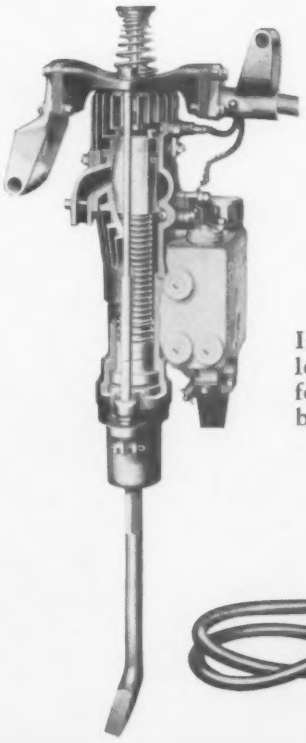
BARCO UNIT TYTAMPERS!

They do a BETTER JOB Quicker

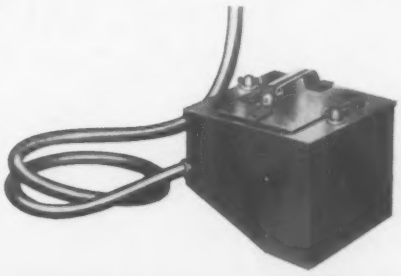
IN OUT OF FACE or SPOT TAMPING
Each Unit is Self-Contained and
Easily Carried by ONE MAN
No Auxiliary Equipment is Needed

NOW 88 RAILROADS USE BARCO

Six Years Satisfactory Service

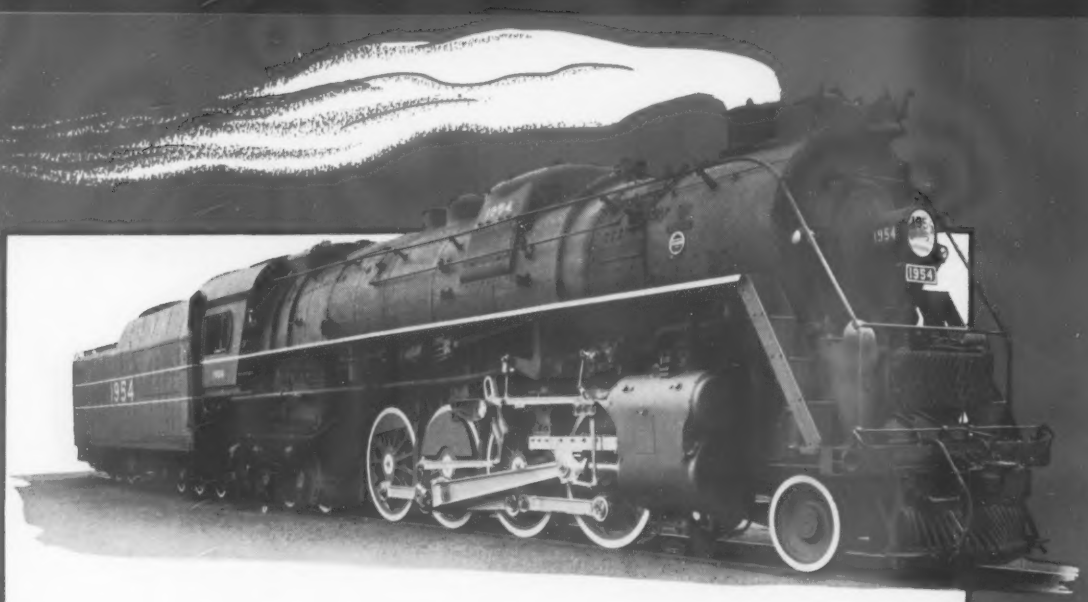


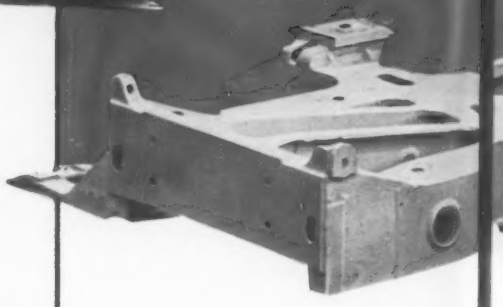
Initial capital expense is lower and year-around performance in tamping, crib busting and ice breaking, add to their efficiency.



Showing Power Plant—costing less than $100.00 and weighing less than 100 lbs. operating group of 12 BARCO Tytampers for out of face tamping.

BARCO MANUFACTURING COMPANY
1800 W. Winnemac Ave. NOT INCORPORATED Chicago, Illinois
In Canada THE HOLDEN COMPANY, LTD.
Montreal — Moncton — Toronto — Winnipeg — Vancouver





14 New, High-Speed

2-8-4's

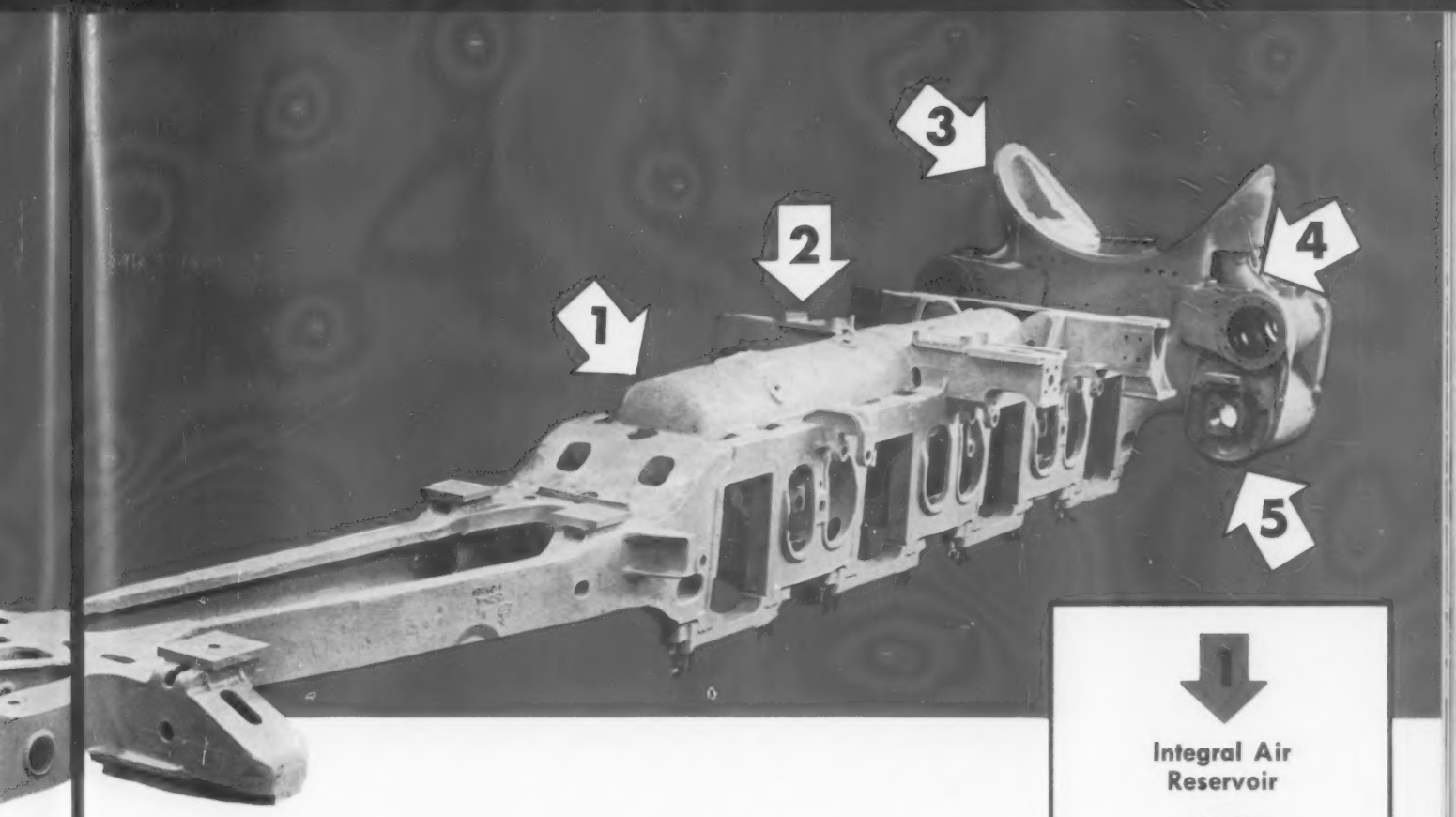
For The

L & N

—Now Being Delivered by Baldwin . . . Are

COMMONWEALTH EQUIPPED

GENERAL STEEL



THESE modern 2-8-4 type freight locomotives with 69" drivers are equipped with the following **COMMONWEALTH DEVICES.**

- ✓ **One-Piece Locomotive Beds**
- ✓ **Pilot Frames and Pilot Beams**
- ✓ **2-Wheel Engine Trucks**
- ✓ **4-Wheel Trailer Trucks**
- ✓ **Boxpok Trailer Wheels**
- ✓ **Waterbottom Tender Frames**

This new, high-speed power will expedite the transportation of vital war materials and freight—help the railroads of America in their tremendous task of moving more tonnage faster than ever before.

COMMONWEALTH Cast Steel Devices assure exceptional strength with minimum weight and eliminate many assembled parts. **COMMONWEALTH** Products have a long, time-tested record of increasing locomotive serviceability and reducing maintenance expense. **POWER THAT IS COMMONWEALTH-EQUIPPED SPENDS MORE TIME ON THE ROAD—LESS TIME IN THE SHOP.**

1 **Integral Air Reservoir**

2 **Sliding Boiler Bearings**

3 **High Cylinder Saddle**

4 **Integral Inside Steam Pipe**

5 **Integral Rear Cylinder Heads**

L CASTINGS

EDDYSTONE, PA.
GRANITE CITY, ILL.

52 Railways

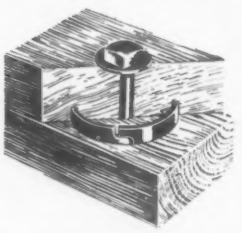
Roundhouse of the St. Louis & Ohio R. R. (Alton & Southern). Roof trusses are "WOLMANIZED" Southern Pine, jointed by TECO Ring Connectors. Other railway jobs in which TECO construction has been used include:

OVERHEAD CRANES
TIMBER BENTS
TRESTLES
WAREHOUSES
COAL POCKETS
AUTO LOADING DOCKS
COALING TOWERS

Use TECO Timber Construction

Because of advantages in strength, economy, and long life, the railways of America use timber and TECO Connectors for practically every type of railway structure.

These advantages . . . of more joint strength with less wood and hardware . . . are obvious to those familiar with the TECO System of Timber Construction, which has been largely responsible for the many advances recently made in engineering timber to modern use as a construction material.



The TECO Ring Connector spreads the load on a timber joint over practically the entire cross-section of the wood . . . brings the full structural strength of lumber into play.

Full details, with case histories of jobs done, will be sent you on request.

Timber ENGINEERING COMPANY
WASHINGTON, D. C. PORTLAND, OREGON

23 INCHES Low Water!

STILL PULLING FOR VICTORY BECAUSE EQUIPPED WITH NICHOLSON THERMIC SYPHONS

DOOR SHEET SEAM SPRUNG
WELDING CRACKED
BOLTS MARKED THUS X PULLED SLIGHTLY THRU SHEET.
AREA THAT WOULD HAVE BEEN OVERHEATED ON A LOCOMOTIVE WITHOUT SYPHONS
SHADED AREA INDICATES PORTION OVERHEATED
36 RIVETS PULLED AND CAULKING EDGE OF FLUE SHEET SPRUNG DOWN TO WATER LINE
SLIGHT POCKET 2½ WIDE AND 56" LONG
BOLTS MARKED THUS • PULLED THRU SHEET
BOLTS MARKED THUS ◎ PULLED HALF THRU SHEET.
DIAGRAM SHOWS THAT VERY SLIGHT DAMAGE OCCURRED ALTHOUGH THE WATER WAS 23" BELOW THE HIGHEST POINT OF THE CROWN SHEET. THE WATER FLOWING OUT OF THE SYPHONS AND OVER THE CROWN SHEET PROTECTED THE SHEET AND PREVENTED SERIOUS DAMAGE.
SHADED AREA WAS BLUE FROM OVERHEATING. SCALE TURNED UP ON WATER SIDE AND CRUMBLED FROM HEAT.
CRACKED FLUE INSIDE OF SHEET.
LOW WATER LINE
SYPHONS
TUBES AND FLUES IN THIS AREA PULLED
TUBES AND FLUES IN THIS AREA STARTED TO PULL
LOW WATER ON A LOCOMOTIVE EQUIPPED WITH NICHOLSON THERMIC SYPHONS
LOW WATER OCCURRED LOCOMOTIVE WAS

Here is another very recent case (eight in the past few months) of low water in which SYPHONS undoubtedly prevented a disastrous boiler explosion. No personal injuries and damage was slight. The Syphons in this locomotive were installed in 1923—19 years of effective service.

NICHOLSON THERMIC

SYPHONS

produce more boiler capacity **with less weight, less steel, less labor and less cost,** and for equivalent results assure greater economy in service and maintenance than larger boilers without Syphons — plus safety from boiler explosions.

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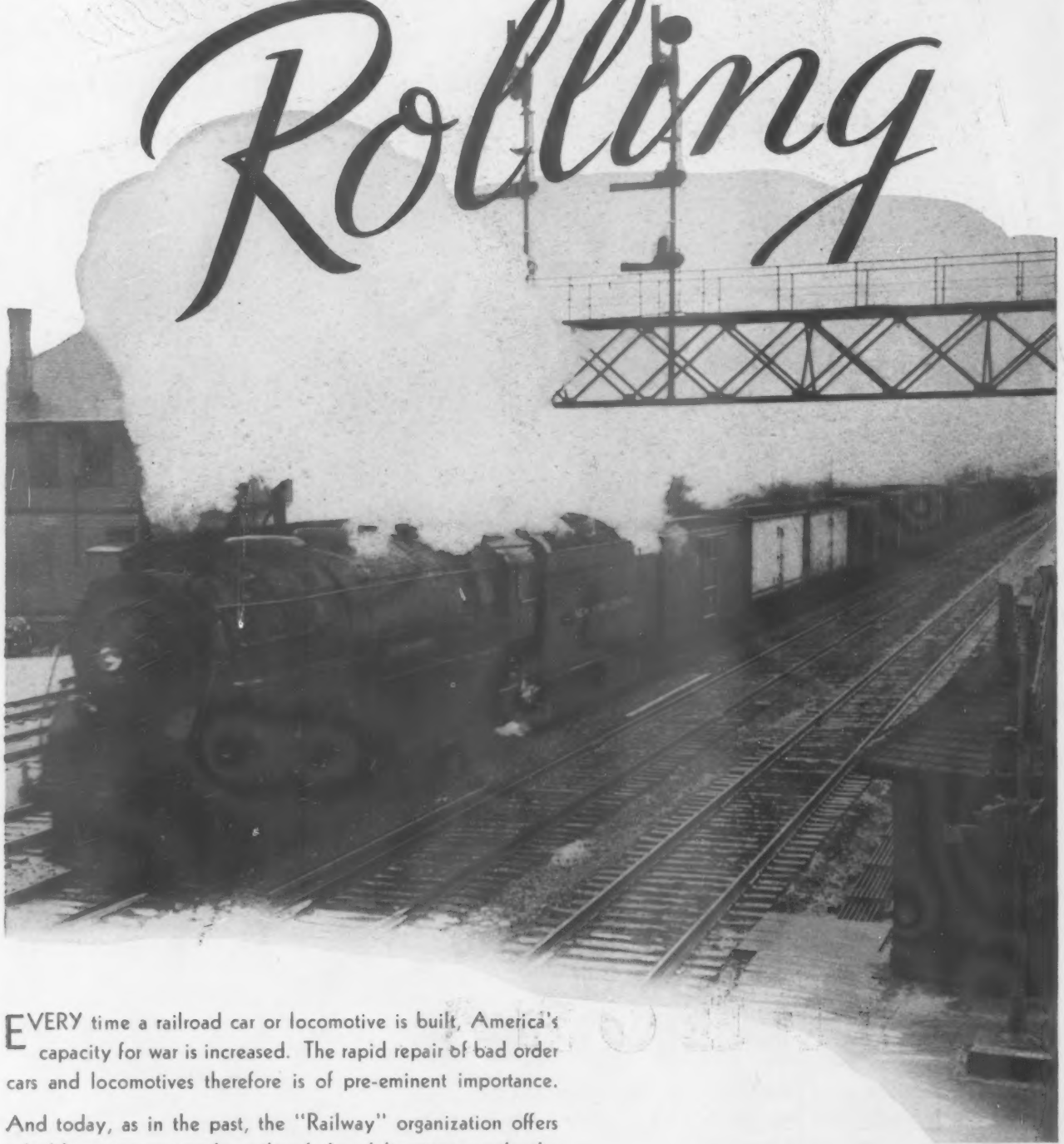

EVERY time a railroad car or locomotive is built, America's capacity for war is increased. The rapid repair of bad order cars and locomotives therefore is of pre-eminent importance.

And today, as in the past, the "Railway" organization offers valuable assistance to the railroads by delivering exactly the right locomotive and car springs which will speed up equipment building and repair programs and protect this equipment in service.

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DURYEA *Cushion* UNDERFRAME

protects war freight-

Anywhere along the line, from loading platform to dockside, vital war shipments may get smacked. Heavier loads and faster schedules intensify the danger of damage to contents.

Fortunate is the shipper whose output travels via the Duryea-Cushioned Car. Floating the car body through each wallop, Duryea Gear gives 100% protection from shock.

Duryea...The Modern Safeguard

When unrestricted replacement of obsolete and worn-out cars is resumed, watch the swing to Duryea. This modern shockproof safeguard will be preferred by every railroad man and shipper who has seen how Duryea saves packing costs, maintenance, time and lading in war service! Plan for the future—investigate Duryea now.

Write for illustrated booklet

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HOW DURYEA CUSHIONING MEETS WAR NEEDS

1. Requires less packing and bracing, speeds up car loading and unloading.
2. Gives shockproof protection to vital war shipments.
3. Permits faster handling, higher speeds—Duryea-Cushioned Cars can "take it."
4. Avoids delays and tie-ups due to draft gear failure.
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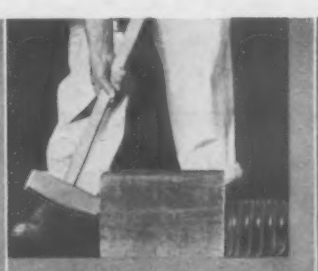
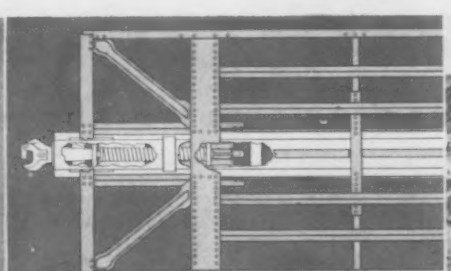
7. Reduces cast steel required as compared with conventional friction draft gear underframe and draft gear replacements.
8. Keeps cars off the cripple track—keeps 'em rolling!



HOW DURYEA CUSHIONING lessens shock. Left: block of wood (sill) against wall will splinter when hit with sledge. Right: With spring allowing block (sill) to slide, the hardest blows won't cause damage.



PHANTOM VIEW shows floating center sills, huge springs that lessen blows. Duryea Cushion Gear lasts for life of car.

MR. RAILROAD OFFICIAL! Duryea Underframe can be supplied by any car builder—pays for itself quickly!

DURYEA *Cushion* UNDERFRAME FOR FREIGHT CARS

THE MODERN SAFEGUARD FOR SHOCKPROOF SHIPPING

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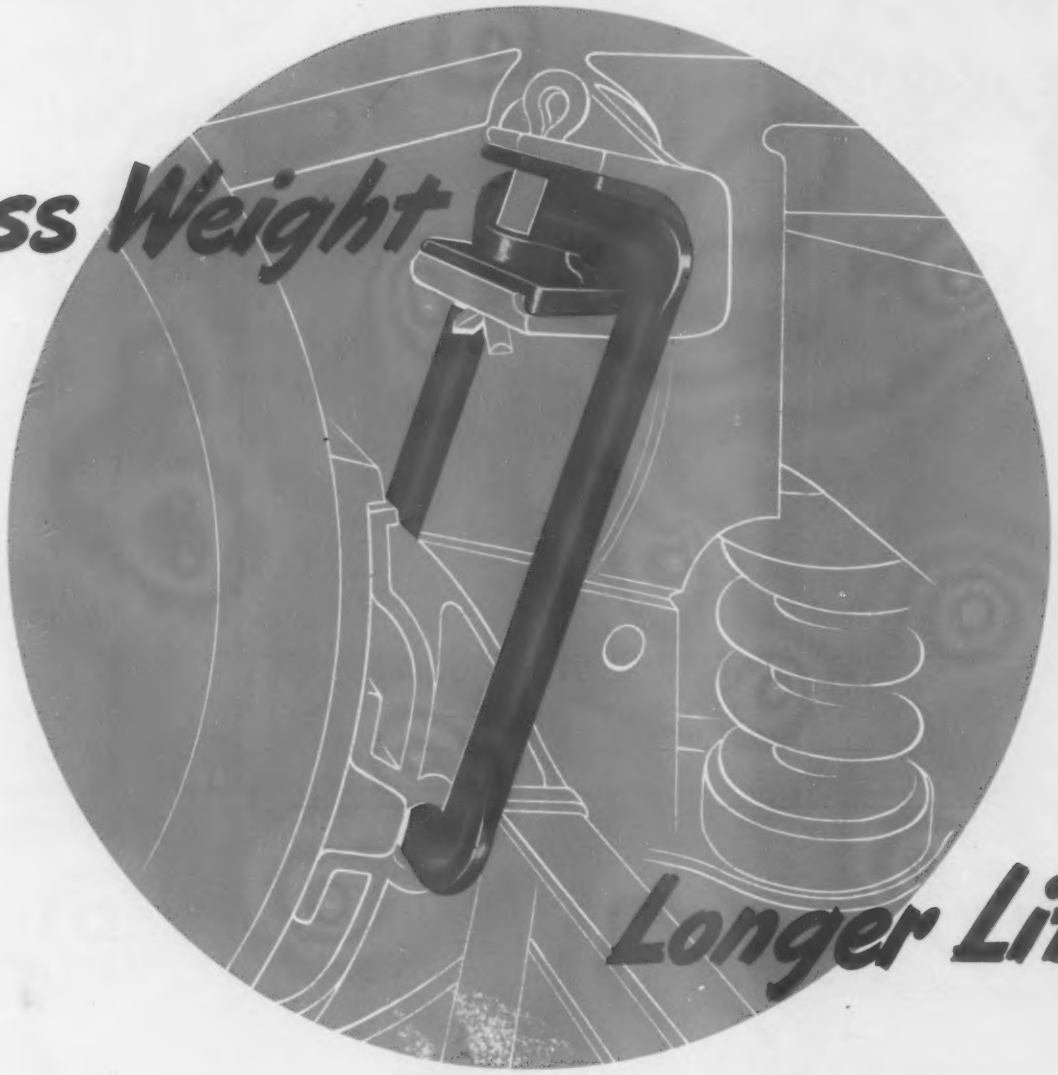

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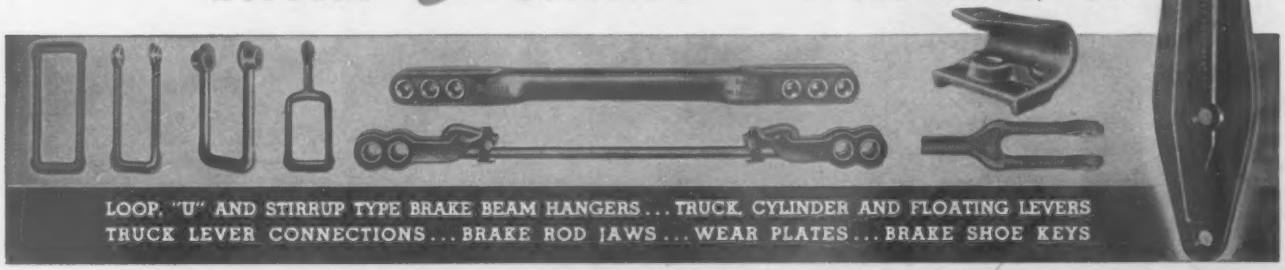

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Baldwin Serves the Nation Which the Railroads Helped to Build

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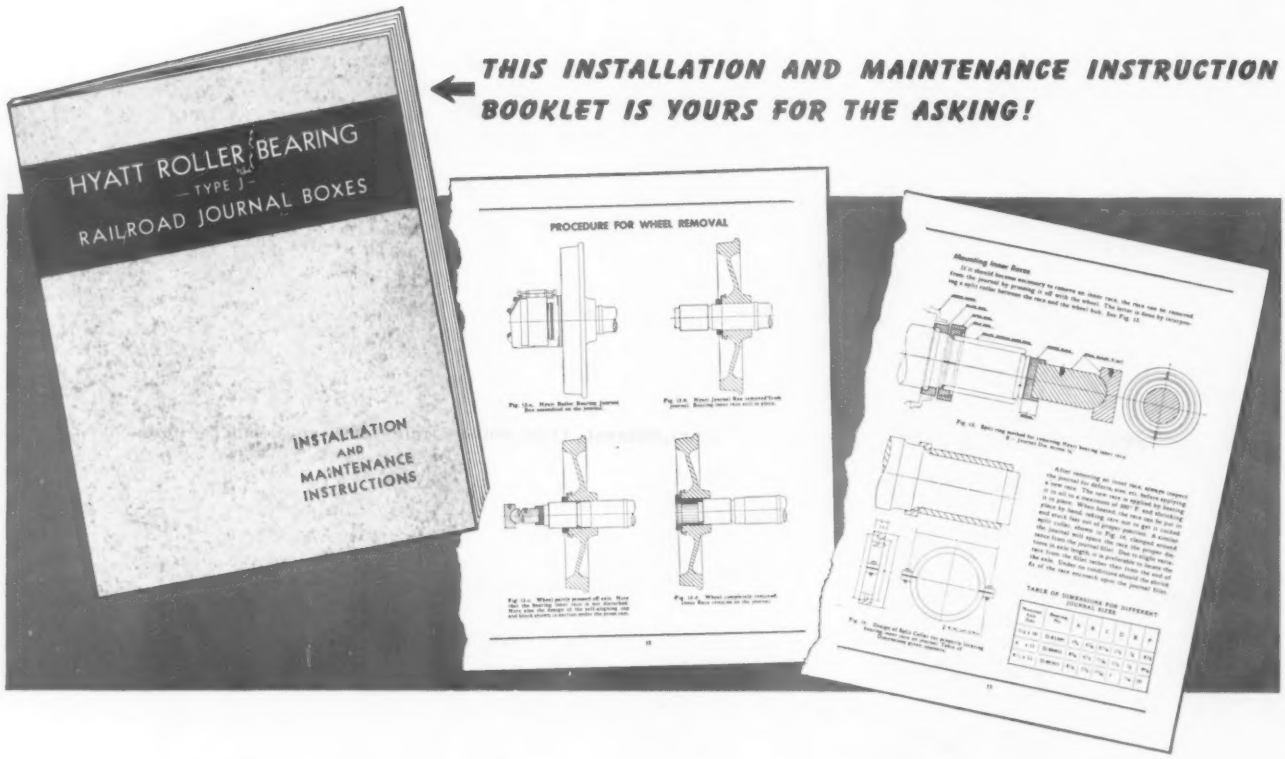

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4 How do you adjust lateral clearances?

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6 How much wear is permissible in box liners?

7 How are inner races removed from an axle?

8 How are inner races mounted and located?

9 Should bearing parts be kept together and why?

10 How should wheels be removed from roller bearing axles?

11 How should repair parts be ordered?

12 How are journal boxes taken apart?

13 How should spare parts be stored?

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Railway Age

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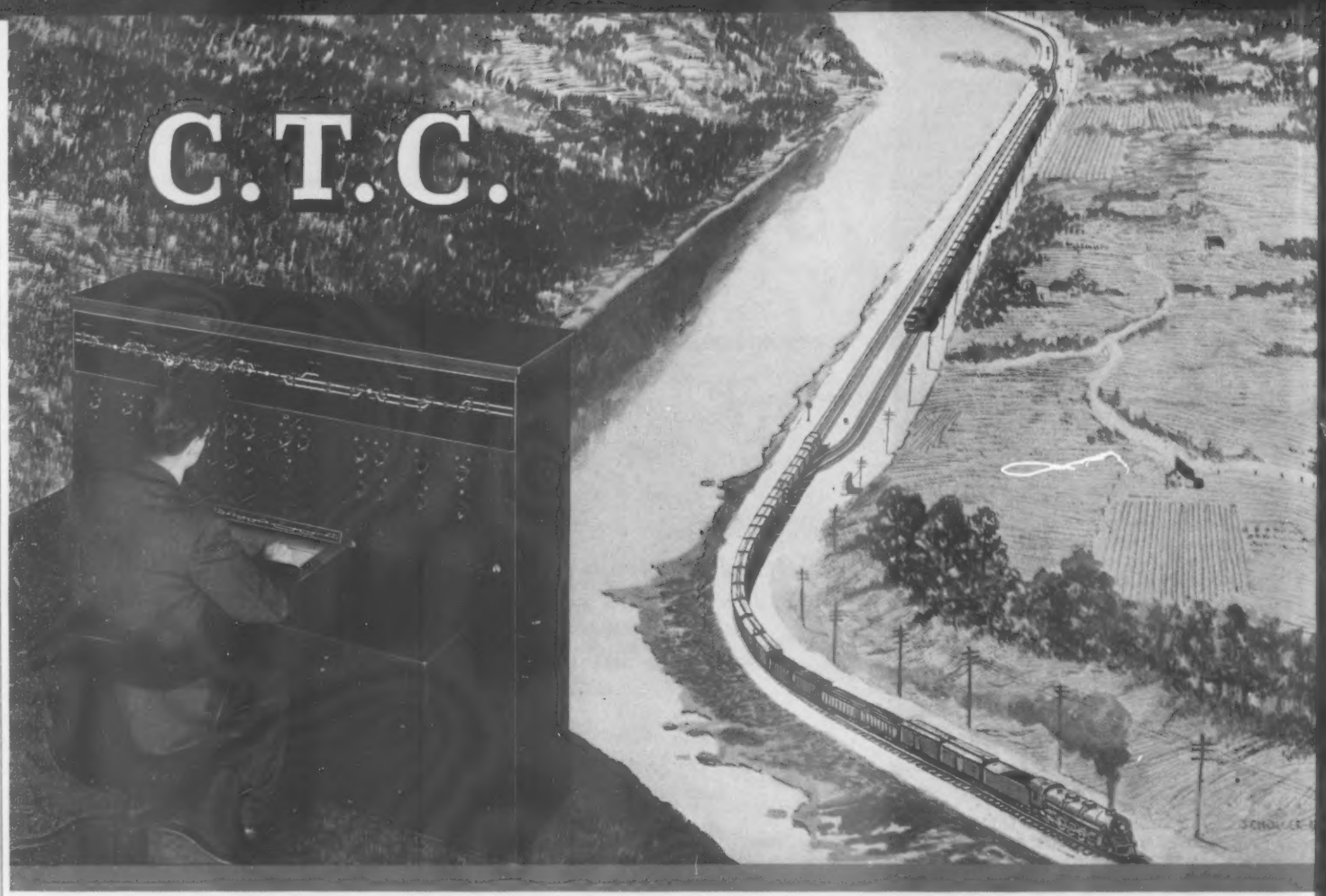


Provides a Bird's-eye View of controlled territory!

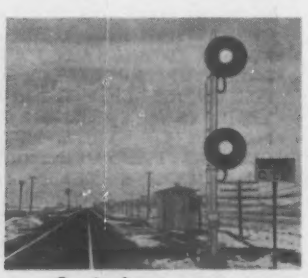
"UNION" Centralized Traffic Control provides the operator with a complete, positive and continuous picture of his entire territory. The minute-to-minute progress of each train is indicated on the miniature track layout at the top of the control panel. Colored indication lights immediately above their respective switch and signal levers show at all times the positions of the switches and whether the controlled signals are in the "clear" or "stop" positions. The train graph located on the desk portion of the control panel automatically makes a permanent record showing the arrival time of each train at each controlled point, the amount of time it consumes in passing and the moment the last car leaves.

With this bird's-eye view of the territory, the operator has continuous and direct supervision over every train in the controlled territory. Switches are positioned, and signals are controlled at the points of required action, to authorize the desired train movements.

Restores switch lever to normal

Clears signal lever

Pushes code-starting button



Switch operates signal clears

UNION SWITCH & SIGNAL COMPANY

SWISSVALE, PA.

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

The Week at a Glance

LABOR AND INFLATION: There isn't anybody who needs more than the railroad employee to have the country avoid a large inflation in the price level. Runaway inflation, once it gets going, always runs too fast for the fastest wage increases to keep pace. Moreover, most railroad employees are counting heavily on their pensions to support them in their old age —and an honest-to-goodness inflation wouldn't leave a pensioner with enough money to buy tobacco, let alone anything else. An editorial herein cites these facts, which any modestly-informed person must know, and asks why, then, the paper "Labor" persistently snipes at people who are trying to prevent inflation. What kind of union journalism is it which attacks the people who are supporting policies in the obvious interest of union members?

●

ACCIDENTS: An editorial herein surveys the recent trend of train accidents, and the causes thereof—figures which suggest that a lot more accident-prevention effort, in a number of different directions, is needed; and needed now. Failure in employee selection and training and inadequate supervision seem to be the principal situations requiring drastic treatment. An upturn in accidents is, naturally, always unwelcome—but it must be doubly so when the carriers are so important a national reliance in waging a successful war.

●

STUDY BOARD REPORTS: One of the reasons why "our transportation problems" are largely unsolved—despite comprehensive regulation—is that carriers and localities complain of unequal and discriminatory treatment. Such is the statement of the Transport Study Board in its annual report, reviewed herein. In the '30's it looked like we had too much transportation, but it doesn't seem that way now. However, the Board admonishes, unless constructive action is now taken, "the old problems of surplus transportation capacity will probably return in intensified form after the war." The Board reveals itself in the midst of an inquiry of far wider scope than most people had suspected. It also is seeking a staggering quantity of information from the railroads.

●

CREDIT STILL LOW: The stock market shows what it thinks of the railroad investors' outlook, by the microscopic valuation it puts upon securities which reflect assets which never before were being employed so intensively and so necessarily in the public interest. What is the cause of this paradox? A well-known authority on railroad finance (Fairman R. Dick) examines the evidence in an article elsewhere in these pages—and, your reporter believes, he advances compelling arguments to sustain his contention that he has discovered the culprit.

●

CAPITALIZED EARNINGS: Mr. Dick shows the circular reasoning by which capitalization limited by earnings is defended. Earnings are, largely, controlled by the rate level which, in turn, is in the hands of the regulatory authorities. By depressing rates, they are able to achieve low earnings, which, in turn, they use as justification for reduced capitalization. This, later on (according to the views of some theorists), might be advanced as an argument for still lower rates; and still further reduction in capitalization, and so on till complete expropriation had been accomplished. What investor wants to put his money in an enterprise where principal can be, and threatens to be, wiped out by such hocus-pocus?

●

BETTER PASSENGER TRUCKS: Seven years of experimentation by the Chrysler Corporation—in co-operation with the Pennsylvania, the New York Central and the Pullman Company—has developed some notable improvements in the riding qualities of passenger car trucks. An article herein reports a portion of this inquiry, e. g., that having to do with the possibilities of getting smoother performance out of existing trucks. Fundamental in this research has been the application of instruments to trucks to reveal accurately the motions of their parts under varied operating conditions.

●

SAVING CARS AND TRUCKS: The railroads and the federal authorities ought to move in on abuses of the "no-bill" situation in the supply of mine cars. Such is the opinion of President Alvin Vogtle of the Association of Shippers' Advisory Boards in a speech reported herein. Mr. Vogtle also decries the allocation of tires to long-haul truckers, instead of to the short-haul jobs, which shippers really need. He believes there is room for improvement in use of railroad cars to and from military establishments.

●

THRIFTY WITH MATERIALS: More than 30,000 Missouri Pacific employees have signed a pledge to do their best to conserve materials, thereby contributing to the effectiveness of the war effort. The Booster Clubs on the railway are campaigning to the same effect—and suggestions (surprisingly good ones, too) are pouring in and are being put into effect. A brief article herein describes this campaign.

●

WHO IS COMPLACENT?: It isn't self-satisfaction on the part of railroad men which will cause the carriers to fail—if they do—to meet promptly all the jobs handed to them. Such was the observation of President Clarke of the A. R. E. A. in addressing the roadmasters' meeting, reported herein. If trouble comes, it will come from trying "to make bricks without straw"—and Mr. Clarke suggests rather pointedly wherein the trouble lies. It has been said that "supreme confidence" exists that the railroads will continue to do their job *"no matter what further restrictions are necessary."* It was not a railroad man who said that, nor is it railroad men who are taking the risks of "too little, too late" in transportation.

LEA ON THE RADIO: Transportation agencies should be judged—not just by their immediate convenience—but from the viewpoint of the ultimate good of the country. Thus Chairman Lea of the House Committee on Interstate Commerce advised in a radio address on September 24, reported herein. An industry as essential to the nation at war—as the railroads are—Mr. Lea warned, must also be sustained in peace time. Regulation, he insisted, should be based upon economic considerations—not on favoritism or expediency. On the same program, E. E. Norris surveyed the severe competition the railroads will face after the war, but, he predicted, the lessons the carriers are learning from the war (such as greater co-operation and improved efficiency) are "guaranteeing the future."

●

WAGE RUMBLINGS: The non-ops have been meeting in Chicago, and talking wages and inflation. Whether they will hit the roads for more money, they are not saying. The engine unions' wage and make-work proposals are in process of mediation. The unions have signified their acceptance of the short line emergency board report, giving them a 10-cents-an-hour increase with back-pay to December, last year. Where some of the roads involved in this case are going to find the money is something else again—but a mere nothing to the emergency board professors and to the union chiefs.

●

CTC BOOSTS CAPACITY: On 60.7 miles of single track between Richmond, Ind., and the suburbs of Cincinnati, centralized traffic control has accommodated an increase in daily trains from 15 to 26 (73 per cent), while getting the trains over the road much faster (and the trains now are longer, too). An illustrated article herein describes the installation.

●

LOADINGS LOSE MEANING: Use of carloadings is still far too persistent for the general good—since these figures have lost their significance, either as a measure of national production or of railroad performance. Continued use of these figures simply means that all but the wary are being misled into serious underestimates of the quantity of the nation's production and the intensity of railroad utilization. The leading editorial in this issue suggests that such misunderstanding may lead to grave miscalculations of the railways' needs for new equipment.

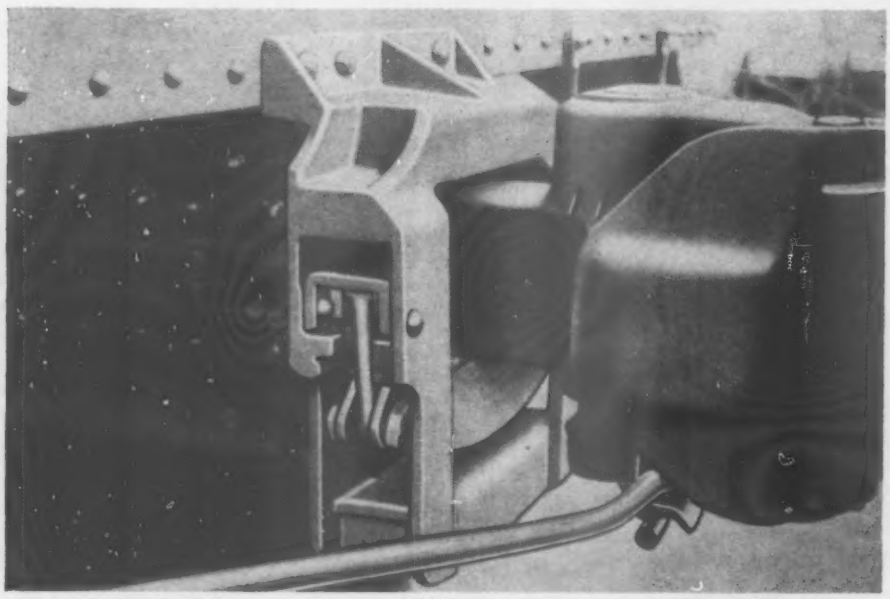
●

HENDERSON ON RATES: The OPA, in a submission by Leon Henderson, has injected itself into the Southern territory fare increase case, objecting to the projected rise from 1.65 to 2.2 cents a mile. As Alvin Vogtle says of OPA rate-making elsewhere in these pages: "They [the OPA] know nothing about this subject, but nonetheless they would follow their usual technique, issuing ill-considered orders of the most sweeping character and then obtain their education through the piteous pleas and anguished cries of the suffering victims."

ELIMINATE COUPLER SHANK WEAR

WITH

UNION SWING CARRY IRON CENTERING DEVICE



REDUCES NUMBER OF BROKEN COUPLER PARTS.

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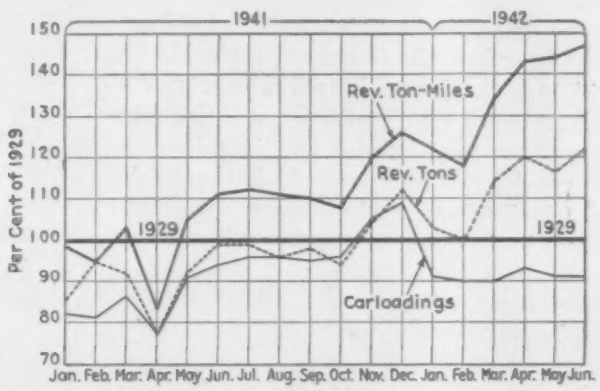
Efficiency FOR VICTORY

Carloadings Increasingly Misleading

Statistics of carloadings continue to be widely used (1) as a measure of railroad performance and (2) as a component of indexes assumed to indicate the country's total industrial activity and production. Such continued use of them has become highly misleading, and perhaps even dangerous because tending to cause great underestimates of the service the railways are rendering and of their needs of equipment and materials.

The true measure of the volume of freight service rendered to the public is revenue *ton-miles*. The true measure of national industrial production, insofar as indicated by railroad statistics, is the number of *tons* transported. Carloadings never were a true measure of either railroad performance or production, although the weekly reports of them served well as an approximate measure as long as there were no great changes in average load per car or in the length of haul.

When, however, there occur great changes in average load per car, or in the average distance freight must be hauled, or in both, the number of cars loaded ceases to be a measure of either railroad performance or of production; and greater changes in both average load per car and in the average distance freight is hauled have occurred within recent years than ever before. In June, 1942, average tons of freight per loaded car were almost 13 per cent greater than in June, 1941, and almost 22 per cent greater than in June, 1929. Also, the average number of miles each carload was moved per railroad in June, 1942, was 7.5 per cent more than in June, 1941, and 20 per cent more than in June, 1929.



The cumulative effect of these changes in widening the disparity between carloadings, on the one hand, and revenue tons carried and revenue ton-miles, on the other, is shown graphically in an accompanying chart. As the chart shows, total carloadings in June, 1942, were actually 21 per cent *less* than in June, 1929, and also 3½ per cent *less* than in June, 1941. But, as it also shows, total revenue *tons carried* had become 22 per cent *greater* in June, 1942, than in June, 1929, and 23 per cent greater than in June, 1941. And revenue *ton-miles* (tons carried one mile) in June, 1942, were 47 per cent greater than in June, 1929, and also 32 per cent greater than in June, 1941.

These changes have relegated the number of cars loaded weekly to a very minor role, indeed, as a measure of how much the nation's industry is producing; of how much service the railroads are rendering to make industry's vastly increased production possible; and of how much equipment and materials the railways have needed and will need in future to meet the amazingly changed and increased demands upon them.

Economics of "Labor"

There is no group of people that would suffer more than railroad employees from a runaway inflation. Experience in such countries as Germany and France indicates that, no matter how fast wages are increased, they cannot possibly be raised as rapidly as prices mount under inflationary conditions.

Railroad employees have a vital interest, also, in the maintenance of prices at a stable level, because of the extent to which they are relying on their pensions to support them in their old age. These pensions are liberal, at present price levels. If prices should greatly increase, and especially if they should increase several hundred or even several thousand per cent, as they would if real inflation occurred, pensions and insurance policies expressed in terms of dollars would become of little value.

All persons who know anything whatever about money and prices are in unanimous agreement on the point, that if people are continually given more money to spend and less goods to buy with their larger amount of money, their competition with each other will force up the prices of goods. President Roosevelt and Leon Henderson see eye to eye on this question with "conservative" economists with whom, on most other matters, they have little common ground.

In view of the unanimity of competent people on the causes and effects of inflation and the steps necessary to prevent it, it is passing strange that the paper "Labor," published by the railway labor unions, should be indiscriminately attacking serious and conscientious efforts by people of all shades of political belief to keep this bitter cup away from the American people. In its September 15 issue that journal heaped ridicule upon a socially-minded literary man who wrote a simple and indisputable explanation of inflation and the price-control and tax policies necessary to avoid it (an article which was widely distributed at the behest of the Treasury Department in the interests of public education in war finance).

"Labor" even expressed approval of some misguided persons who were reported to be withdrawing their patronage from the business with which the author of this article is connected. In its preceding issue, "Labor" challenged anyone to prove that wage increases could bring on inflation—which was not unlike asking someone to demonstrate that 2 plus 2 equals four.

Also, in the September 15 issue of this official organ of the railway unions there was published a report that those organizations were unanimously opposing the taxing authorities giving the railways permission to charge to current operating expenses the amounts by which (owing to the shortage of materials) the railways are currently being forced to under-maintain their properties. If such reserves for undermaintenance were authorized they would provide a "back-log" of employment for railway labor after the war ends, and when jobs may be hard to get.

It is unfortunate for the future economic outlook of railroad employees that their principal source of economic "information" shows such complete lack of intelligence regarding their true interest.

Increase of Train Accidents

The increase in train accidents in 1942, following the increase in 1941, constitutes an unusual challenge to railway managements and employees because the nation is at war. As emphasized in Safety Section circular S-782, dated October 1, 1942, the railroads' reputation for safety in train handling is in jeopardy, and the section points out pertinently that "we must beat train accidents or they will beat us."

Such accidents often increase during periods of increasing traffic, and the volume of present traffic requires greatly augmented efforts to prevent them. They are costly to the railroads because they result in the loss of life, disable valuable employees and damage or destroy equipment, tracks and lading. They are especially harmful now, because they impede the flow of men and materials to the points where they are imperatively needed in carrying on the war.

There can be no solution of the increasing accident problem excepting the elimination of its causes—negligence or incompetence of officers or employees, defects in or failure of equipment, defects in or improper maintenance of way and structures. More than 44 per cent of train accidents in 1941 were due to negligence of employees. Many new men must be employed during the war period; and the rapid rise in the number of accidents due to "man failures" from 1,713 in 1933 and 2,619 in 1940, to 4,161 in 1941, plainly demands better training and supervision of employees.

A study of the last 100 investigations of train accidents made by the Interstate Commerce Commission shows that 70 per cent were the result of improper selection of employees, inadequate supervision or insufficient training. Twenty-one were caused by flagging failures, 14 by excessive speed, 11 by failures to observe signal indications, 11 involved train orders, 3 involved violations of yard rules, and 10 were due to miscellaneous man failures. These 70 accidents caused 96 of a total of 156 fatalities, and 1,149 of a total of 1,880 non-fatal injuries. The 21 flagging failures alone caused 33 fatal and 449 non-fatal injuries.

Of the 9,401 train accidents that occurred last year, 2,899 were collisions and 4,866 were derailments. They caused property damage totaling $15,667,000 and resulted in the killing of 295 persons and the injury of 2,137. More serious is the fact that such accidents are still increasing. The elimination of their causes by the proper selection, training and supervision of employees and by the adequate maintenance of equipment and roadway is always important, but becomes of more than normal importance when they hinder the uninterrupted flow of traffic demanded by the nation's war effort.

Better Rides from Conventional Passenger Trucks

Four-link bolster guides, elliptic spring covers, and variable-resistance lateral-motion hydraulic energy absorbers effect marked improvement in performance

IN 1935 a research program was initiated by the Chrysler Corporation, based on its automobile ride developments, and aimed at improving the riding quality of railroad rolling stock. Experimentation has been carried on continuously since that time, both in the laboratory and on the road. The New York Central, the Pennsylvania, and the Pullman Company have actively collaborated with Chrysler in securing marked improvement in riding comfort.

The scope of the development work extends to all fundamental factors affecting the riding performance of rolling stock. An essential part of the program has been to devise new methods for accurately measuring this performance in terms of the vertical and lateral accelerations transmitted to the car body. The successful solution of the instrumentation problem has made it possible not only to evaluate the extent of changes in performance, but to establish a criterion of riding quality.

Rehabilitating Existing Trucks

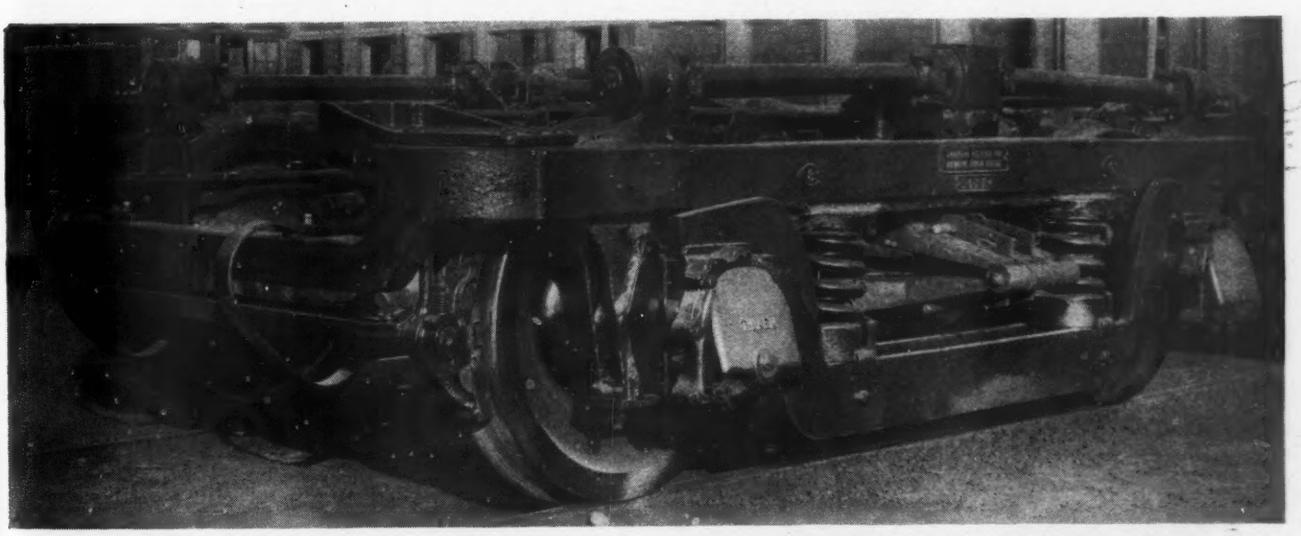
The results achieved include the development of new passenger-car trucks, which combine a notable improvement in passenger comfort with marked reduction in weight. The present article is limited to certain portions of this development, which have been incorporated in a co-ordinated group of accessory units and are now available for the purpose of rehabilitating standard types of passenger trucks.

At the outset of the experimental road-test program it was recognized that accurate, reliable instrumentation of high sensitivity would be indispensable in properly evaluating the effects of equipment changes. While satisfactory accelerometers were available for counting vertical shocks, a thorough study showed that there was no adequate unit to perform the essential but much more difficult function of accurately integrating the lateral accelerations.

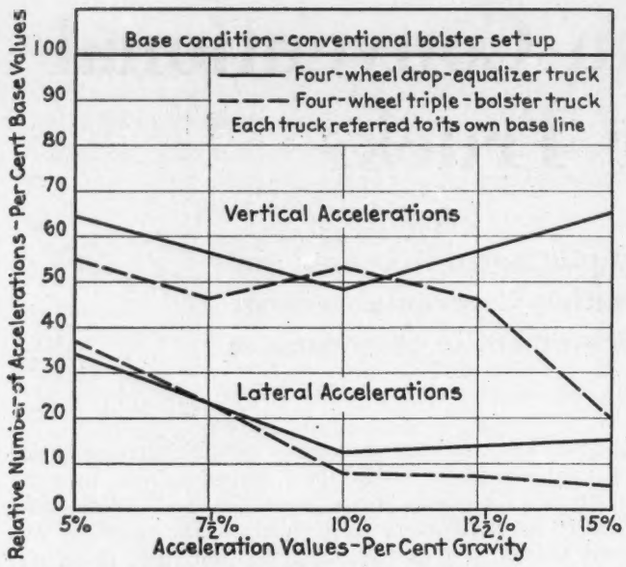
Starting with a Gray contact-type accelerometer with counter recording, a unique set-up was developed which has proved sensitive and reliable in measuring lateral accelerations. The accelerometer unit is securely mounted on a pivoted base which acts like a pendulum to neutralize centrifugal forces. This prevents any change in the accelerometer calibration which would otherwise result from rocking of the car body or from the action of centrifugal force on curves. Two such units, each with a separate bank of five counters, are used in a car to obtain the total number of accelerations of five different intensities in each lateral direction.

An important feature of the pendulum-mounted accelerometer is that the centers of percussion of the accelerometer inertia elements lie on the pivot axis of the swinging platform. This prevents the pendulum action from cushioning the accelerometer against the lateral shocks to be measured. Oil dashpots are employed to dampen the oscillations of the pendulum base.

For measuring vertical accelerations similar accelerometer units are used, secured solidly to the platform casting or the center sill. In this case, the instrument is



A Drop-Equalizer Truck Equipped with Four-Link Bolster Positioning, Metallic Elliptic Spring Covers, and Variable Resistance Lateral-Motion Hydraulic Energy Absorbers on the Bolster

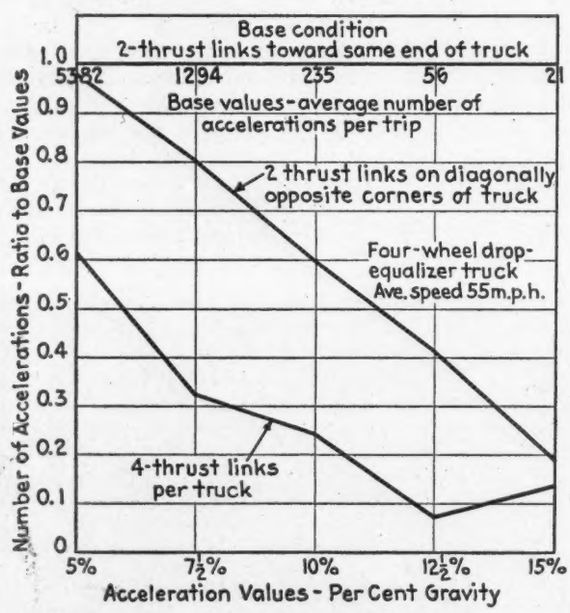


The Effect of Thrust Links for Positioning Passenger-Truck Bolsters on the Riding Qualities of the Car

mounted so that the inertia elements act vertically instead of laterally. Two units are used per car, usually at the truck centers. The accelerator elements of each unit car are calibrated for five different acceleration intensities, which record on separate counters as in the case of the lateral instruments.

Free Bolster Action

Early in the investigation it was discovered that a free bolster is essential to proper lateral action and further experience proved that any step taken to free the bolster from frictional restraint goes far toward improving the lateral performance, irrespective of the truck type. The swing hangers, when free to move, provide one of the best means for keeping out of the car body lateral disturbances originating at the rail.



How the Arrangement of the Bolster Links Affects the Lateral Ride of the Car

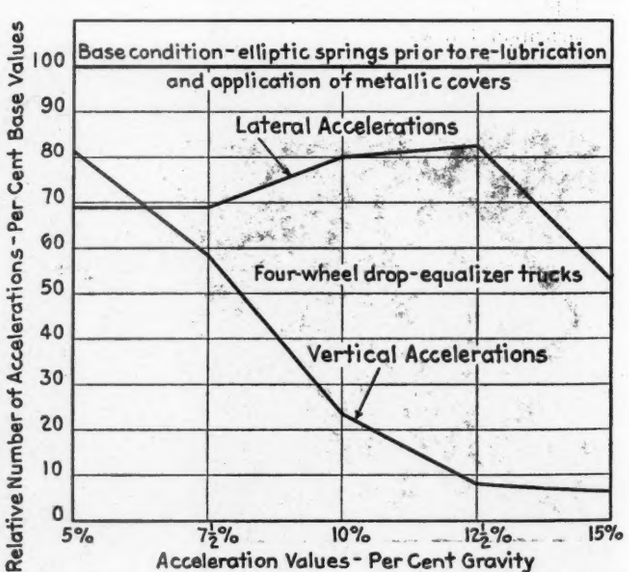
This improvement was effected in two steps. The first was the elimination of all friction between the bolster and transom by the removal of the metallic wear plates and the substitution of four thrust links to guide the vertical and lateral movements of the bolster. In these links, applied on both sides of the bolster, the force components tending to distort the position of the bolster are balanced and both its lateral and vertical movements are uninfluenced by the longitudinal thrust forces transmitted through the links. The second step was the reduction of the friction in the bolster swing-hanger assembly by the substitution of rockers for friction-type bearings.

During the road tests it was found that the vertical riding qualities invariably grew progressively worse as the tests proceeded due to the uncontrolled increase in the friction between the elliptic bolster-spring plates caused by the accumulation of corrosion and dirt. This led to the development of metallic covers for the elliptic springs within which the springs, after having been cleaned, can be kept permanently lubricated.

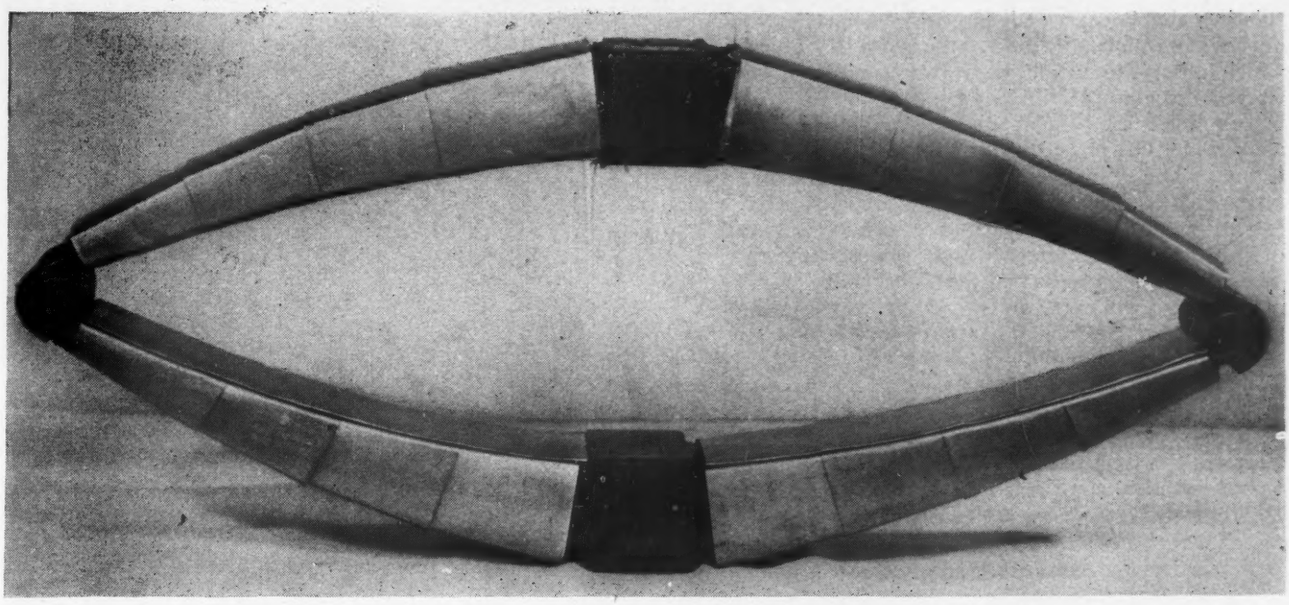
The third improvement was effected by the application of a Houdaille hydraulic energy absorber to cushion large lateral movements of the bolster.

The improvements in riding qualities effected by these changes are presented in a series of graphs showing the reduction in the number of lateral movements recorded at acceleration intensities varying from 5 per cent to 15 per cent of gravity. The installation of four bolster thrust links on a conventional drop-equalizer type of four-wheel truck reduced the number of 5-per-cent gravity shocks 70 per cent as compared with the same truck equipped with the conventional bolster, and reduced the number of 15-per-cent shocks 85 per cent as compared with the conventional bolster. Installed on the Pullman triple-bolster type of truck, the improvement in the ride was of about the same order.

While primarily designed for the improvement of lateral action, the thrust links also effected considerable improvement in the vertical action of the bolster by eliminating the frictional drag of the wear plates. In this case the reductions both at the low and the high rates of acceleration amounted to 35 per cent as compared with a similar drop-equalizer truck with the conventional bolster arrangement; the reduction was somewhat greater in the intermediate range of acceleration rates. The improvement on the triple-bolster truck,



The Protection of the Elliptic Springs Improves the Lateral as Well as the Vertical Ride

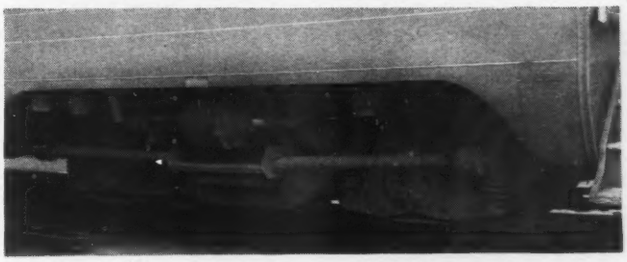


Telescoping Metal Spring Covers Applied to the Elliptic Springs of a Passenger Car

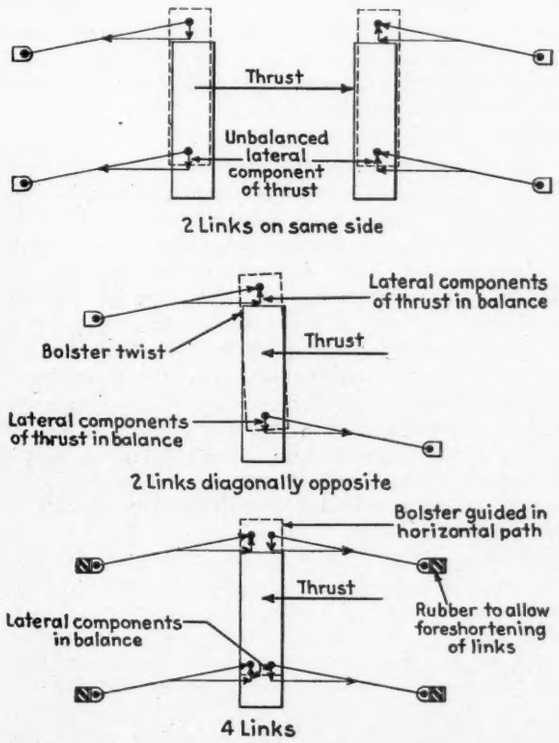
particularly in the higher rates of acceleration, was considerably greater.

It was found during the test that following the lubrication of the springs the number of shocks recorded for various rates of acceleration increased progressively as time elapsed. Then, following the application of spring covers to the freshly lubricated springs, the number of shocks recorded dropped and thereafter remained fairly constant. The improvement in riding qualities effected by the protection of the springs is shown in one of the graphs.

In developing the thrust-link positioning of the bolster three arrangements were tested. In the first, two thrust links were placed toward the same end of the truck, one attached to each end of the bolster and to the truck frame. In the diagram showing the forces in the links resulting from longitudinal thrust applied at the bolster center plate, it will be seen that the lateral components of the forces in the links, which develop when the bolster is swung to either side of its center position, are unbalanced, tending further to exaggerate the lateral swing of the bolster and prevent it from centering freely.



A Four-Link Bolster Positioning Installation on a Triple-Bolster Truck



Force Diagrams of Three Arrangements of Bolster Positioning Links

The second positioning arrangement to be tested utilized two thrust links on diagonally opposite corners of the truck. As shown in the diagram, the lateral components of the link thrust, when the bolster moves to either side of its center position, are in balance, but there is a tendency to twist the bolster.

Final Arrangement of Bolster Links

The third and final arrangement to be tested utilized four thrust links on each truck. With this arrangement not only are the lateral components of the thrust through the links balanced when the bolster is swung to either side of its center position, but both the lateral and vertical movements of the bolster are kept in a vertical plane on the transverse center line of the truck. To permit the foreshortening of the links required to accommodate the lateral displacement of the bolster, they are mounted in rubber at the truck-frame attachments. The rubber mountings serve the further purpose of in-

sulating the bolster and car body from the high frequency vibrations, including those in the sound range, which otherwise would be transmitted from the truck frames through the links.

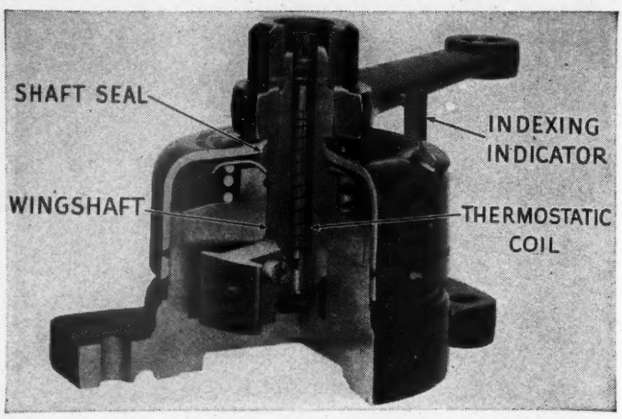
The links are tubular in form with universal joints welded on the ends to permit full freedom of bolster action. The joints are of the heavy-duty automotive type produced in quantity for use in truck-drive shafts. Sealed-in anti-friction bearings eliminate any frictional drag which might otherwise be imposed by the links. The flange of the universal joint is bolted directly to the bolster lug, while at the other end the attachment is made through rubber in compression.

In one of the graphs are shown the comparative performances of these three methods of link positioning. Plotting the performance of the two-link arrangement with the links both placed toward the same end of the truck as the base performance over a range of acceleration intensities varying from 5 to 15 per cent of gravity, the relative performances of the other two arrangements are shown in terms of their ratio to the base condition at each acceleration intensity. It will be seen that the four thrust links show a decidedly smaller number of shocks than either of the other two through most of the range of acceleration intensities for which tests were made. Only in the case of the highest acceleration intensity do the two links diagonally disposed approach the four-link arrangement in the smoothness of their performance.

The Variable-Resistance Energy Absorber

One of the illustrations shows the Houdaille unit which was specially developed to supplement the four-link positioners as a check on excessive lateral movement of the bolster. When it is in its normal or central position, the fluid can by-pass around the wingshaft, through a recess in the cylinder wall. This provides practically

One of the Pendulum-Mounted Lateral Accelerometers



Sectional View of the Houdaille Hydraulic Energy Absorber

no restraint on the lateral movement of the bolster near its central position. Thus, the bolster hangers are free to perform their function of permitting the car body to ride forward undisturbed by lateral shocks of small displacement originating at the rail. As the lateral movement progresses, however, the by-passes are closed, and the hydraulic pressure then builds up to cushion the effect of large centrifugal or other forces affecting the side motion of the car.

A new and essential feature is an indexing indicator which insures that the lever arm is properly located in its central position in relation to the by-pass. As shown in the illustration, this consists of two pieces of small round stock, one of which is welded to the movable lever and the other to the base of the unit. When the ends of these pieces are directly opposite each other, the device is in its central position and the by-passes are at maximum opening.

The shaft seal in this unit was especially designed for railroad applications. As can be seen from the sectional illustration, there is a spring arrangement which maintains a constant pressure on the packing against the shaft. The center stem incorporates a thermostatic coil which automatically keeps the valve in proper adjustment to compensate for any fluid viscosity changes due to temperature variations.

Bolster Spring Covers

The bolster spring covers, employed to insure unimpaired freedom of action of the elliptic bolster springs, are similar in principle to those in universal automotive service. These covers are made of No. 24 gage terne plate, which is considerably heavier than that used in automotive practice. In installing, the springs are first thoroughly covered with grease, and canvas pieces wrapped around them. The telescopic bottom and side covers are then installed and the continuous top covers snapped in place over the flanges of the sides. The joint is then permanently closed by crimping. Holes for the insertion of a grease gun are provided for convenient addition of lubricant when desired.

The four-unit link assembly, supplemented by the variable-resistance Houdaille hydraulic energy absorbers and the elliptic spring covers, have been placed on the market through an arrangement with E. A. Lundy, Inc., 420 Lexington ave, New York, as a means of effecting permanent improvement both in the lateral and vertical riding qualities of conventional passenger-car trucks. Trucks so equipped are now in service under certain passenger cars operating on the New York Central and the Pennsylvania.

Annual Report of Study Board

Reveals how its investigations have taken on comprehensive and far-reaching scope, including call upon railroads for big job of gathering waybill data

WASHINGTON, D. C.

MAKING its annual report to President Roosevelt and Congress for the year ended September 18, 1942, the Board of Investigation and Research created by the Transportation Act of 1940 last week outlined the current status of its various studies and looked forward to completing the investigation of the interterritorial freight rate structure in January, 1943, the report on public aids to carriers "early in 1943," and the report on carrier taxation by the close of the current fiscal year ending June 30, 1943. With respect to the investigations of the relative economy and fitness of carriers, the report said that these "are of such magnitude and importance as to require a longer period for completion."

As noted briefly in last week's issue, the report was submitted on September 18, the anniversary of the Transportation Act of 1940's approval by the President. The act specifically requires that annual reports be made. Since the first annual report of September 18, 1941, came only a few weeks after the Board, consisting of Chairman Nelson Lee Smith, Robert E. Webb and C. E. Childe, had taken office, the present review reveals for the first time the comprehensive and far-reaching inquiries which have been undertaken.

Gives Roads Big Data-Gathering Job

Among other things, it reveals that the Board recently requested from all Class I roads information covering the movement of carload freight on certain days in 1939. The request which went out this month asked each road to furnish, within 90 days, original waybills, photographic copies, typed or handwritten copies of waybills, or unit forms with information transcribed from original waybills, covering all revenue carload shipments terminated by it which originated on 12 specified dates in 1939. The 12 specified days are different for each road in any given territory.

The work of complying with this request has been appraised in railroad circles as a big job at any time, and a tremendous assignment for accounting departments to take on during the present war period. As noted in the *Railway Age* of December 7, 1940, page 878, the railroads at that time succeeded in persuading the Interstate Commerce Commission to rescind its January 9, 1940, order which had embodied a demand for similar data for use in the Nos. 28300 and 28310 investigations of the class rate structure and consolidated freight classification. It is understood that the carriers made a like effort to dissuade the Board from following through on its plans to make the request; but the Board insisted that the information is necessary for the successful completion of its studies. The data, the annual report said, is needed "to reveal the composition of the regional and interregional traffic of the rail carriers;" and it "will be useful in the study of the precise composition and flow of railroad traffic."

Previously the report had got under way with a foreword, which asserted that, despite the extension of regulation to all types of carriers, "our transportation problems are still largely unsolved"—because "carriers complain of unequal and unfair treatment by the government," and "shippers, localities, and regions complain of unjust and discriminatory rates." In like connection reference is also made to measures "to restrict transportation services," which were adopted in the depression years, when "it was thought that we had an excess of transportation facilities." Then came the war emergency which "made it clear that our national transportation system—far from being too large—is barely adequate, and may fall short of our vital needs, notwithstanding the magnificent efforts of carriers and shippers to obtain the utmost efficiency of service."

"Unless constructive policies are adopted," the Board added, "the old problems of surplus transportation capacity and destructive competition will probably return in intensified form after the war." Thus, as the report put it later on, the wartime emergency conditions "have not diminished the significance of the problems which the Board is directed to investigate." The Board cited as one reason for its faith in the continuing importance of its mission, a passage from President Roosvelt's June 26, 1942, proclamation extending its life to September 18, 1944. That proclamation, it was recalled, declared that "an efficient transportation system is essential to the nation in peace and in war, and the national interest requires the development of informed policies by which such a system can be promoted, strengthened and maintained."

Meanwhile the report had described briefly the duties of the Board, revealing that in pursuing its specific assignments in connection with rail, motor vehicle, and water transportation it is also studying related aspects of air and pipe-line transportation. Such studies are being made under that provision of the act which authorizes the Board to go beyond its specific assignments to conduct any other investigations deemed important for the improvement of transportation conditions and to effectuate the national transportation policy.

Economy and Fitness a Five-Part Survey

In its undertaking to follow Congress' specifications on the economy and fitness study, the Board has launched investigations of five "closely related matters" as follows: (1) The trends of the volume and composition of the traffic of the country and of its distribution among the major carrier agencies; (2) the relative economy of the several types of carriers, as reflected by their comparative costs; (3) the ability of the several types of carriers to furnish needed service and the possibilities of improving their efficiency; (4) the comparative labor standards found in the respective carrier fields; (5) the effects of regulatory policy upon the relative economy

and fitness of the several types of carriers. From these studies the Board expects "to determine the demands facing the transportation system of the country, the methods whereby the various carriers may be developed to serve the public interest, and the elements of national policy needed to promote an adequate transportation system."

Because of its view that national aggregates and averages "cannot reveal adequately the character of competition in the transportation field and the precise place held by the competing carriers," the Board has developed its study of traffic along regional lines. "One type of carrier," the report suggested, "may possess a certain importance in national averages but be of markedly less importance in certain areas of the country or in the movement of important classes of traffic." The regional breakdown uses seven areas, and in each case it emphasizes "the extent to which particular commodities are moved by competitive transportation agencies." Six of the regions conform to six of the territories to which railroads have been assigned by the Interstate Commerce Commission for statistical purposes, while the seventh is made up of two such territories, combining the Great Lakes and Central Eastern regions.

The foregoing comments are embodied in that section of the report where the Board revealed that it had made the request for 1939 waybill data. Also mentioned at that point is an analysis being made of rate cases decided by the I. C. C., "showing for recent years the relative importance of service and rate comparisons in the allocation of traffic to the several carriers." Preliminary study of these data "suggests that in general the service attributes of the highway carriers have changed sufficiently to make relative rates more important than formerly in the distribution of traffic." Further study of the relations between shippers and carriers is to be made "to determine how well the transportation services and facilities of the various types of carriers are adapted to the needs of commerce and how the real or apparent demands of shippers, the carriers' responses to these demands affect the costs of transportation."

Concluding its discussion of the traffic-trends inquiry, the report suggested that "the impact of the war upon the economic structure of the country carries with it possibilities of significant changes in the organization of industry and commerce, and consequently in transportation." It added that "these influences, together with the emergence of new transportation facilities and techniques, may alter substantially both the volume and character of the traffic and its distribution among the competing modes of transport."

Analyzing Carrier Costs

That phase of the economy and fitness investigation which contemplates an analysis of the respective costs of the various carriers is characterized as "not a simple matter." In developing cost data the Board "is giving particular attention to representative situations involving the movement of typical commodities by competitive carriers." The work is being carried on "by specialists in rail, highway, and water transportation, but similar approaches and consistent methods are being followed so that results may be fairly comparable." Studies of rail costs are being made in different areas where the three forms of transport compete. One such study concerns transportation in the Mississippi Valley where "the costs of transporting sugar, both under actual operating conditions and hypothetical conditions of capacity loading," are being calculated between New Orleans, La., and various points north thereof. With respect to the same traffic, the costs of transportation by water—including, in some instances, joint services by two or more modes of transport—are being also analyzed for comparative purposes; and the costs of transporting canned goods in the opposite direction "will likewise be obtained."

"Similar studies," the report went on, "will be made of representative commodity movements in other areas such as the transportation of general merchandise between Los Angeles and various points on the Pacific Coast, the transport costs in the Atlantic Coast area, New England, the Great Lakes region, the Southeast, and the Southwest, as well as costs of interterritorial and transcontinental movements."

Cost studies of representative motor carrier operations "in general" parallel the studies of railroad costs. In this connection the Board "is utilizing data drawn from many sources, including much material not heretofore available but secured through the cooperation of carriers having satisfactory records of both line-haul and terminal operations." Costs of water carrier operations are being determined by "various methods," including use of studies made by the Inland Waterways Corporation, data in the hands of the United States Maritime Commission and returns to questionnaires sent to all common and contract carriers operating on the Mississippi river and its tributaries.

Studies of Service and Operations

The service and operations study was deemed by the Board to be a necessary supplement to cost analysis—because the significance of cost relationships "may be substantially qualified, or even overbalanced, by differences in the adequacy and characteristics of the service which the carriers perform." Thus the inquiry into such matters as the relative time in transit, packing requirements, damage or loss in transit, reliability and adequacy of service; and "other factors affecting the relative fitness of the carriers to render the desired types of service." Moreover, the Board anticipates that these studies "will suggest the means by which each type of carrier can and should be developed and the changes which may occur in the competitive positions." For this purpose, "recent technological changes in transportation and various expedients for increasing the efficiency of carrier operations" are being analyzed; and consideration is also being given "to possible simplification of carrier accounting and to means whereby needed accounting and statistical data may be made more readily available."

With respect to railroads, the foregoing means that attention is being given to such matters as "shop practices, signaling (including centralized train control), Diesel and electrical locomotives, freight and passenger train equipment, and terminal yard design and operation." Also, to "pooling, clearing-house settlement of interline accounts, and the broader issues involved in possible mergers, unifications, and coordination." Changes affecting the efficiency of motor carrier operation are being analyzed "in the five related fields of highway vehicles, roads, motor fuels, tires, and carrier organization"; while "significant technological changes which have taken place in water transportation have been examined, together with the trends which are discernible at the present time."

The labor-standards study was undertaken because

wages and working conditions prevailing in the several carrier fields "affect importantly the cost of transportation," i.e., labor standards "may bear significantly upon the relative economy and fitness of the carriers." Suggesting that "average requirements of skill and experience may differ in the three fields of transport," the Board went on to say that average wage rates "will not fully disclose the relative wage levels of the various carriers." Thus the further analysis "to group on the basis of the skill and experience required, the different jobs existing in each of the fields into a small number of classifications." Among other things, this study is expected to lead to a determination of whether inequalities in labor standards exist; and if any are found there will be a follow-through to determine "their effects upon carrier efficiency."

In the regulatory-policy study the Board is determining the extent to which existing controls influence relative economy and fitness. This embraces an inquiry into rate policies to find out whether such policies promote economy and fitness and provide "equality of competitive opportunity to all areas, to large and small shippers, and to all industries." Also, "particular attention is being given to the effect of present limitations of operating authority upon the costs and rates of each agency and upon the form and effectiveness of competition"; while another examination is being made of public control of competition and unification. In the latter connection the report noted that existing consolidation legislation is "generally more restrictive" when a proposed merger involves the unification of carriers of different types. The control of water and air carriers by railroads, for example, "is practically prohibited wherever the result would be to restrain competition." Because such public policies "may have important effects upon the efficiency with which our national transportation resources are utilized," the Board hopes to disclose such effects and to consider "possible legislative changes."

The Public-Aids Investigation

The largest section of the report is devoted to a discussion of the investigation of public aids to carriers. Procedures adopted for this investigation and statistical material compiled for it by the Board's staff were brought out in public hearings which were reported in *Railway Age* issues of July 4 and July 11. The present report covers much of the same ground, although here and there it indicates some tentative conclusions which have been reached. In the latter connection, for example, the Board rejects the view of some waterway and highway interests who hold that, in determining the extent of public aids, there should be taken into account such consequential benefits as the development of the country, unemployment relief, and "lowered transportation charges which shippers pay."

"It seems clear," the report said, "that while the purpose of public expenditures is presumably to create public benefits, these benefits cannot enter into a determination of the amount of public aids to the carriers. The extent of the aids must be determined before a basis for their appraisal as a matter of public policy can be established. In considering whether public aids have been worth while, it is proper to weigh the beneficial and harmful effects, but this should be done only after the amount of the aids has been determined as precisely as possible. This distinction between aids and benefits is fundamental."

With respect to railroad land grants it is conceded that a finding as to the public aid involved "requires that concessions made by the carriers to the federal government for the transportation of mail, troops, and property be taken into account." Also, "it is questionable whether donations by individuals, associations, and private corporations, and the 'apparent aids' as well should be treated as public aids." The report on "Public Aids to Transportation' issued in 1940 by former Coordinator Joseph B. Eastman stated that the railroads received a total of 839,956 acres for carrier purposes from these sources, the "apparent aids" being "grants received under conveyances reciting nominal considerations, the amount of which is generally unknown."

Defaulted R.F.C. Loans Are Not Yet Losses

As to the amount of aid to railroads involved in Reconstruction Finance Corporation loans, one of the Board's staff exhibits presented at the public-aids hearing suggested that it would be reasonable to assume that the R. F. C. would probably lose the $137,328,165 in principal and $29,627,955.19 in interest on loans in default as of April 30, 1942. The report is not so brash. It calls the prospects "uncertain," adding that "an effort is being made to evaluate the collateral securing these loans." The same view is taken with respect to Public Works Administration loans to railroads.

In appraising the extent of public aid involved in these loans, the Board will consider the net cost to the government. It does, however, refer to contentions that the measure should be the benefits received by the railroads, i.e., a comparison of the interest rates charged by the government with rates the carriers would have had to pay for private funds if they could have borrowed the money at all from private investors. "It would be difficult," said the report, "to measure even roughly what the costs of alternative sources of capital might have been in the abnormal period during which these loans were made. Since the results would be of very doubtful value, no estimate of public aid to the borrowing railroads, from the standpoint of savings to them has been made."

When calculating public aids to highway carriers the Board took in relief expenditures at 60 per cent for the years 1933 through 1936 and at 80 per cent from 1936 through 1940. "These discounts," the report asserted, "reflect the generally recognized fact that relief expenditures were somewhat less productive of transportation values than those made under ordinary road-building auspices." The reduction in the discount in the later years "recognizes that WPA road work became more efficient as early organizational defects were remedied, supervisors gained experience and a larger part of total WPA and sponsors' funds were spent for equipment instead of directly for labor." The discounts are tentative at this time, and may be revised as further study is completed.

Highways Given Lives of 53.9 and 56.5 Years

In setting up its figures for the annual cost of primary highways, the Board arrived at amortization periods of 53.9 years for capital outlays made in the 1921-1930 period and 56.5 years for construction expenditures of the 1931-1940 period. A shorter amortization, 35.7 years, was used in the calculation of annual costs for secondary and local roads built in the entire 1921-1940 period.

Data on public aids to water transportation show, among other things, that of the improved channels for

which traffic is reported only in tons, "one half of the total number account for approximately 94 per cent of the traffic and for only 64 per cent of the total costs." On the projects for which traffic is reported in ton-miles, "one-half of the total number account for 99 per cent of the traffic and only 72 per cent of the total costs." This aids-to-water-carriers phase of the public-aids investigation will include a study of the government-owned Inland Waterways Corporation, operator of the Federal Barge Lines on the Mississippi and Warrior rivers. Also, public aids to air transportation are being studied in comprehensive fashion.

The third and last of the Board's specific assignments is the investigation of the extent to which taxes are imposed upon carriers by federal, state, and local governments. The report said this inquiry was "closely related" to the public-aids investigation, since "certain tax contributions must be taken into account in any determination of the net amount of public aid, or subsidy." Likewise, "the comparative burden of taxation is important in its bearing upon the relative economy and fitness of the several types of carriers"; and furthermore "taxes constitute a sufficiently large element of transportation costs to make the matter of equitable taxation in the carrier field an important question of public policy."

Among the "major problems" involved in the taxation study, the report lists that of determining what taxes should be classified as "special benefit" taxes as distinguished from "general taxes"; the criterion of a carrier's obligation to support the general functions of government; and the corrective legislation and administrative procedures called for "if one carrier or group of carriers appears to be overtaxed as compared with another."

1942 Rail Taxes Will Shatter All Records

Discussing railway taxes, the report pointed out that 1941 accruals "reached an all-time high of $576,000,000," adding that this record will be shattered in 1942 when Class I roads had charged $488,310,898 to the tax account by the end of June and will probably raise the total to well over three-quarters of a billion by the end of the year." Figures are cited to show how railroad tax accruals have increased "20-fold" over the past half-century, during which there have been only three periods "when earnings increased at a significantly more rapid rate than taxes." Those periods were "the decade of expansion ending in the panic of 1907, the war year's 1918-1920, and the recovery years 1933-1935."

"Special interest," the report said, "attaches to the railroad property tax, not only because it accounts for more of the railroads' tax dollars than any other one tax in the years prior to 1942 and more than all other taxes combined prior to 1940, but also because it is a type of tax which bears heavily on only one other group of carriers—the pipe lines. Next to the size of this tax, its most striking characteristic is its stability. The change from 1923, a relatively prosperous year, to the worst depression year of the 1930's amounted to less than five per cent, and from 1933 to 1940 there was a further change of only five per cent. This stability is one of base as well as rate. . . . Increases in federal taxes in the past two years have diverted some attention from the property tax to net income and excess profits taxes."

In the latter connection reference is made to one of the report's tables which "show that these taxes have only recently become important and suggests that their importance may wane rapidly after the war if fundamental changes in tax institutions or the financial structures of the railroads are not effected in the meantime."

Water-Carrier Taxes Hard to Find

After a brief outline of its methods of gathering data on highway carrier taxes, the report proceeded to its discussion of water-carrier tax figures, which it has found "particularly difficult" to compile. Among other reasons for this is the fact that "a large percentage of those operating floating equipment and terminals are manufacturing and mining companies whose transportation activities are incidental and whose taxes are not divisible into those attributable to water transportation and those relating to other phases of the business." Nevertheless the Board has gathered data, the "most noteworthy feature" of which is "the small amount of property taxes paid by the shipping companies." Even the terminal companies "do not bring the property tax contribution of the water industry to a very high level, for many of them are stevedores, while wharfs and piers frequently are publicly owned and hence exempt from taxation." The data also disclose that the water transportation industry "pays most of its taxes to the federal government"; and that "neither state nor local governments have secured as large a share of the tax dollar as they do in the case of the railroads. Also, the Board sees significance in the fact that the ratio of state net income taxes to total federal and state net income and excess profits taxes "is about four times as high for railroads as it is for shipping companies."

With respect to air-carrier taxes it is noted that their growth "has been exceptionally rapid"; while the trend of oil pipe-line taxes "has been upward since 1925." Income taxes have been the heaviest levy on pipe lines, with the gross receipts tax second and property taxes "a poor third"—the latter despite the fact that pipe lines, like railroads, "involve relatively large investments in fixed assets."

The Interterritorial Rate Investigation

The investigation of the interterritorial freight rate structure is outside the Board's specific assignments. It was undertaken early this year in accordance with a commitment made to Senator McKellar, Democrat of Tennessee, who in his role as chairman of a Senate appropriations sub-committee had threatened to vote against a pending appropriation for the Board unless he got a definite promise that the rate study would be made. He got the promise; or, as the report euphemistically put it, "the study of this important question was undertaken after there had been in Congress a considerable expression of a desire that it be investigated by the Board."

"The investigation," the report said, "is necessarily of a somewhat different character than that instituted by the Interstate Commerce Commission [in Nos. 28300 and 28310]. The Board is not investigating the lawfulness or unlawfulness of present rates under existing statutes, which is a matter within the jurisdiction of the Interstate Commerce Commission. The Board is interested primarily in the economic effects of existing and proposed rate levels and structures upon the national economy and in questions of public policy which are involved in the controversy. In addition to this fundamental difference between the Interstate Commerce Commission's investigation of interterritorial rates and that being made by the Board, the commission's in-

vestigation is limited, generally speaking, to the class rates east of the Rocky mountains and the reasonableness of the freight classifications throughout the country, while the scope of the Board's investigation is nationwide as to both rates and classification and includes commodity, as well as class, rates."

Later on the report noted that the rate probe will include an analysis of "the effect of the rate structure on the location of economic activity with special reference to manufacturing industries." That phase is called "essential to an appraisal of the influence of the intraterritorial and interterritorial rate structure on the locational pattern of industry in the United States, and on the differences in economic development of the various rate-making territories."

Ways to Greater Equipment Economy

By A. W. Vogtle*

SOMETHING must be done and quickly, in the protection of rubber for the absolutely essential truck services. Even now when you go to the Tire Board in Birmingham you are told that first priority is accorded the long-haul truckers of materials to the shipyards of the Gulf Coast, hauls of 300 to 400 miles, leaving no tires for the more valuable short-haul trucker. This long-haul stuff ought to go to the rails, in my judgment, if we are to have tires for the trucks relieving the rails in the short hauls.

In recent meetings of the Contact Committee of the Southeast Shippers' Advisory Board with the Office of Defense Transportation, some of the more important subjects under discussion have been concerned with the co-ordination of rail and truck operation for the purpose of securing the maximum utilization of equipment and facilities of each transportation agency. The general theory is trucks for the short hauls and rails for the long hauls, but there can be no hard and fast rule. These requirements necessarily will vary with the different territories.

The studies now under way in the great Chicago and St. Louis areas may provide a working basis for such co-ordination. Meanwhile, shippers can minimize the serious effects of these eventual readjustments by proceeding now and voluntarily with such revision in their own operations as may further this general program.

The extravagant use of freight car equipment in movements to and from cantonments and other military activities is another subject receiving attention. Improvement is being sought through the Interstate Commerce Commission, the Office of Defense Transportation and the district managers of the Car Service Section of the Association of American Railroads. I think Tom Healy (district manager, Car Service Division, at Atlanta) has this situation in good shape in the Southeast.

Committees are being established at strategic points to work with Office of Defense Transportation and the Interstate Commerce Commission in all matters relating to transportation in the respective areas. These committees can unquestionably be of great help in reconciling local situations to the general necessities and in helpful public education.

Proposed ODT General Order No. 18, Maximum Loading of Carload Freight, has been under discussion now for some months and is undergoing final revision to be effective October 15. I think the general requirement will be marked capacity (and not marked load limit) or visible capacity, whichever is less, with various exceptions, and with a simple permit system for individual situations. This order will immeasurably improve utilization of locomotives, which is so necessary if we are to continue to enjoy adequate transportation.

Mr. Pelley is arranging to have the railroads give consideration to a 500-lb. allowance for dunnage on freight loaded in closed cars during the life of ODT Order No. 18. We have requested that this liberalization of the dunnage rule be made effective on the effective date of order No. 18.

The open-top car supply has come in for most serious consideration. This is the tight spot in railroad transportation today. Heroic measures are necessary. The Association of American Railroads, the Office of Defense Transportation and the Interstate Commerce Commission are on their tiptoes, but we are facing trouble. Shippers must continue to load quickly. Consignees must continue to release quickly. The railroads must get into and out of the large-loading plants more frequently and hurry loaded cars to consignees and to connections, picking up empties as released.

And there must be "guts" by the Association of American Railroads, the Office of Defense Transportation and the Interstate Commerce Commission in clearing up abuses in the "no-bill" situation at coal mines. I ask that an informative full page editorial from *Railway Age* of September 12 be reproduced in the proceedings. I think it will shock every man here to learn from this editorial that one of the coal fields had the privilege of tieing up 2,186 cars in loading 810 cars on September 1. This practice must give way in war time. I remind the Association of American Railroads, Office of Defense Transportation and the Interstate Commerce Commission that cars are for transportation and not for storage.

In the Southeast there are more open-top cars loaded with other commodities than with coal, and these other shippers are not permitted to hold large numbers or any number of "no-bills" free of demurrage.

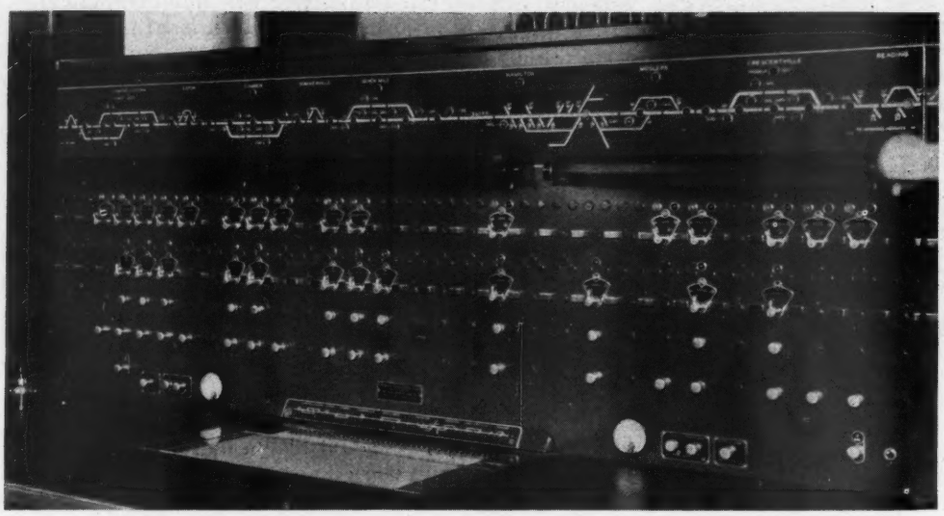
Ceiling on Freight Rates Opposed

The Southwest Industrial Traffic League has just passed resolutions in favor of a ceiling on freight rates. I think the National Industrial Traffic League, possibly, is toying with the same idea. The practical result would be to "freeze" freight rates whether they be high or low. Therefore, I want to commend the Southern Traffic League on the resolution it has adopted in opposition to freight rate ceilings by legislation or by the Office of Price Administration. This resolution sensibly insists that the Interstate Commerce Commission has ample authority to protect the shippers.

I speak from experience when I say that you will do yourself a favor if you keep your freight rates out of the hands of Office of Price Administration. They know nothing about this subject, but nonetheless they would follow their usual technique, issuing ill-considered orders of the most sweeping character and then obtain their education through the piteous pleas and anguished cries of the suffering victims. That much of such pain and suffering may be unnecessary seems actually to be an argument in favor of the drastic rather than the moderate program.

* President, National Association of Shippers Advisory Boards. This article is an abstract of statement made by Mr. Vogtle at a meeting of the Southeast Shippers' Advisory Board at Atlanta on September 16.

New C.T.C. Absorbs the War Load On the Pennsylvania



The Control Machine Is Located in the Office at Hamilton, Ohio

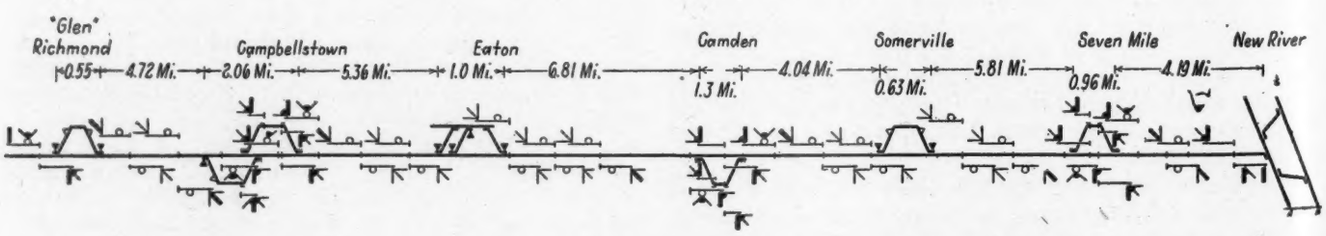
Installation on 60.7 miles of single track between Richmond, Ind., and Cincinnati, Ohio, reduces train time although the number of train movements has increased 73 per cent

IN spite of an increase of 73 per cent in the number of trains due to war traffic, train movements are being expedited, as compared with previous methods of operation, by an installation of centralized traffic control which was placed in service during September, 1941, by the Pennsylvania on 60.7 miles of single-track main line between Richmond, Ind., and Norwood Heights, Ohio, a suburb 11 miles from the Union station in Cincinnati. During the latter part of 1941, the traffic ranged from 12 to 15 trains daily, but due to the war the average during July of this year rose to 10 passenger trains and 16 freight trains, or a total of 26 trains, an increase of 73 per cent over the maximum of 15 trains daily a year ago.

As compared with previous operation by time-table, train-orders and manual block, the centralized traffic control has been the means of reducing the average time of freight trains 29.1 minutes, a 15 per cent reduction in total time. Furthermore, the trains are now handling additional tonnage, because some of the passing tracks were lengthened and also because the new power-operated switches permit the elimination of train stops which were previously required to operate hand-throw stands at passing track switches. A special feature of the project is that power switches were installed only at those passing tracks which are normally used by through trains.

General Character of the Line

This Cincinnati-Richmond line is an important unit of the Pennsylvania System. At Cincinnati, connections are made with various railroads as well as with the Pennsylvania's line from Pittsburgh to Cincinnati, while at Richmond, connections are made with the Pennsylvania's main line between Pittsburgh and St. Louis. From Richmond, a line also extends via Logansport, Ind., to Chicago, and another line runs north from Richmond through Grand Rapids, Mich., to Mackinaw City, Mich., crossing the Pittsburgh-Chicago main line at Ft. Wayne, Ind. Thus the Richmond-Norwood section handles the traffic



Plan Showing the Arrangement of Tracks and Signals on the Centralized

moving between Cincinnati and these various lines to the north and west.

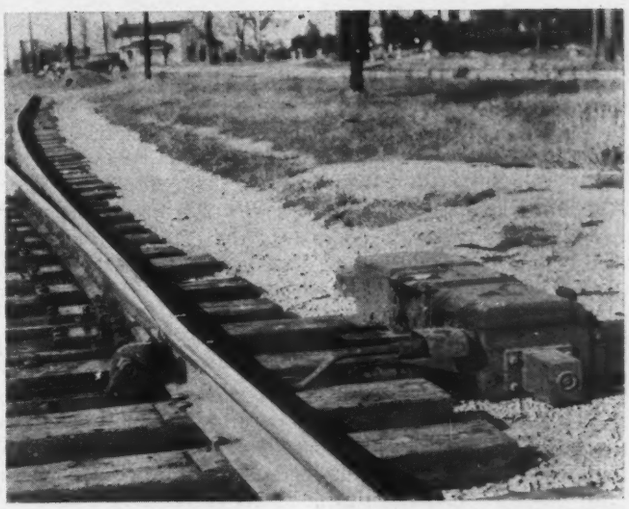
During the autumn and winter, four passenger trains are operated each way daily between Norwood and Richmond, and on most days two second sections are required. In the spring and summer months, five passenger trains are operated each way daily, with second sections during the week-ends of trains to and from northern Michigan. The schedules include three through freight trains in each direction daily, and extra freight trains are operated as required. During the summer of 1941, the total number of trains handled daily ranged from about 12 to 15 or more. The traffic increased gradually during 1942, until an average of 10 passenger trains and 16 freight trains were operated daily during July.

For the most part, the line follows up the valleys of streams from Norwood northward, with a gradually ascending grade to the south end of Campbellstown and with a maximum ascending grade of about 0.75 per cent for 1.2 miles between M. P. 61.9 to M. P. 63.1 From Campbellstown to Richmond, the grades are undulating, and do not exceed 0.5 per cent. On account of curves and street crossings at grade, train speeds are limited to 15 m. p. h. through Hamilton. Likewise, on account of street crossings, the authorized speed through Reading is 40 m. p. h., while a curve near M. P. 25 requires a speed limit of 40 m. p. h. and a curve at M. P. 69, a limit of 50 m. p. h. The maximum permissible speeds specified in the time-table are 65 m. p. h. for passenger trains and 40 m. p. h. for freight trains.

Safety Increased and Delays Reduced

Prior to the recent improvement program, train movements were authorized by time-table, train orders and manual block, no automatic block signals being in service, and the passing siding switches were operated by hand-throw stands. Absolute block was maintained for all movements involving passenger trains, but freight trains were allowed to follow freight trains into a manual block on a premissive indication, and some delays were occasioned by the necessity for running at reduced speed where the sighting distances ahead were restricted. Also, when approaching some of the block offices, the speed was reduced so that trains could be stopped short of the manual block signal if it was not displaying the Clear aspect when the engineman came within view of the signal.

The purpose of the improvement project, including the extension of certain passing tracks, and the installation of automatic block signaling and centralized traffic control including power-operated switch machines and semi-automatic signals for authorizing train movements, was to improve safety, minimize the time lost by trains entering or leaving passing sidings, and to reduce delays occasioned by the manual block system. Rule 261, which now applies to the authorization of train move-



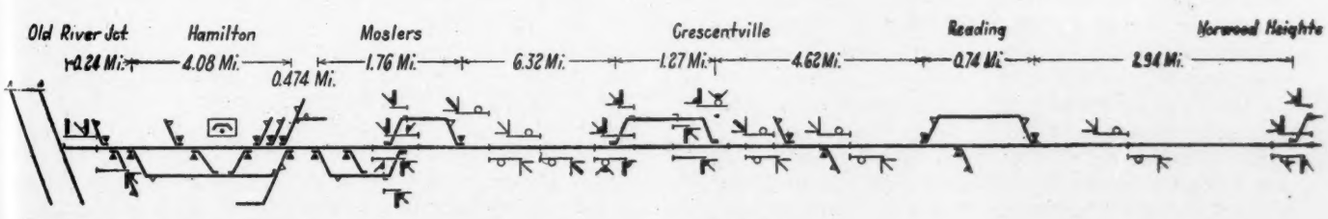
Passing Track Switches Are Operated by Electric Machines

ments by the indications of semi-automatic signals, reads as follows: "On portions of the railroad and on designated tracks so specified in the time-table, trains will be governed by block signals whose indications will supersede the superiority of trains for both opposing and following movements on the same track." Rule 264 reads as follows: "Except as affected by Rule 261, all operating, signal and interlocking rules remain in force."

The siding at Camden and the westward siding at Campbellstown were extended to a capacity of 125 freight cars. New No. 15 turnouts and switches were installed at the west end of Camden and at the east end of West Campbellstown. In the normal procedure of train operation, meets and passes are made at only certain places, including Crescentville, Mosler, Seven Mile, Camden and Campbellstown. The siding at Reading, for example, is used for storing cars, especially work equipment, while the siding at Eaton is used occasionally by work trains to clear the main line.

After a study of the train movements, decisions were made concerning the equipment to be installed for the operation and protection of each main-line switch. Power switch machines were provided at both switches of the single passing tracks at Crescentville, Seven Mile and Camden. In the lap siding layouts at Campbellstown and Mosler, power machines were installed at the two switches at the lap which are used when trains are headed into the sidings.

At the passing sidings and at turnouts leading to industries where sufficient track room is available to enable a train to clear the main line, the new hand-thrown switch and lock movements are each equipped with electric locks which are controlled by the C. T. C. operator so that the switch cannot be operated unless a release is effected by control of the operator. The purpose of the electric



Traffic Control Installation Between Richmond, Ind., and Norwood, Ohio

locks is to prevent a train on an industry spur from entering the main line at a time which might interfere with the movement of through trains for which main-line routes and blocks had been or are to be established by the control operator. A telephone at each such switch affords a means of communication so that the conductor of a switching crew can inform the control operator when the train is ready to occupy the main line, and likewise the operator can inform the conductor whether the lock will be released at once or after a certain train passes.

Arrangement of Semi-Automatics

At each power switch location, semi-automatic signals, controlled by the C. T. C. operators, are provided to authorize trains to (1) proceed to the next signal, (2) enter the passing track, and (3) leave the passing track and proceed on the main line. At the end of a passing track equipped with a hand-throw switch-and-lock movement including an electric lock, such as the west end of

A Station-Entering Semi-Automatic Signal

the westward siding at Campbellstown, no semi-automatic signals are provided. A train having entered this siding, via the power switch at the lap, is brought to a stop short of the clearance point on the turnout at the west end. When a trainman uses the telephone to inform the control operator that the train is in the clear, the control operator informs the trainman whether the electric switch lock will be released at once or at a certain time later. When the operator releases the electric switch lock, this conveys authority for the train to enter the main track and proceed.

The semi-automatic signals, power switch machines and electric switch locks on the entire territory between Glen interlocking at Richmond and Norwood Heights, are controlled from a centralized traffic control machine in an office in the passenger station at Hamilton. Located under a glass cover in the top of the desk at the base of the control panel is an automatic train graph in which the paper graph sheet moves at the rate of three inches each hour under a set of 21 pens, each of which is operated to indicate whenever a train occupies the corresponding OS section, a section in the rear of the Approach signal for a passing track layout, or an automatic block in which there are electric locks.

Coding Systems Used

Between the C. T. C. machine and the respective field locations, the controls of signals, power switches, electric switch locks and maintainers' call lamps, as well as the return of indications to the control machine concerning the position of switches, aspects displayed by signals and outages of a-c. supply, are all handled by a two-wire, time coding system. The two code line wires are used also for a telephone circuit for communication between the control office and any of the field stations. Filters are provided so that codes and conversations can be handled simultaneously without interference.

All signals are located at the immediate right of the track governed, and, where necessary, the siding tracks were thrown over to allow proper clearance for signals between tracks. Conventional neutral d-c. track circuits with 4-ohm relays were used on this project through passing track layouts and where crossing signals were involved. Elsewhere d-c. coded track circuit apparatus was used because track circuits of this type up to 11,000 ft. will operate reliably, whereas two or more track circuits might be required for a 11,000-ft. block if conventional d-c. equipment were used.

This installation was planned and installed by forces of the Pennsylvania Railroad.

Conservation for Victory

EVER since the scarcity of certain materials seemed imminent, the Missouri Pacific has been conducting a campaign to conserve materials. This consisted, among other things, of a number of attention-compelling posters, with slogans such as "Waste Is Sabotage," "Get in the Scrap," "By Saving All Scrap, You Can Help Get a Jap," and many others. To dramatize and personalize this campaign still further, pledge cards containing requests for suggestions as to conservation were sent to each employee early this year, which have produced very gratifying results. More than 30,000 pledges have been received from M. P. employees, demonstrating their co-operative attitude towards this undertaking that is so essential to the national war effort. The pledges read as follows:

"I want to do my part in conservation, thus fulfilling not only my duty as a railroader but also my duty as an American who wants to contribute something—however small—to the nation's war effort. I realize that war requirements have created serious shortages in many classes of supplies and materials used by our company, and I further realize that my failure to conserve such materials and supplies would help to sap the available amount of critically needed war materials and also impose an added burden on manufacturers engaged in filling defense orders. In the belief that large scale savings can be accomplished only through individual effort, I solemnly pledge myself to conserve Missouri Pacific Lines supplies and materials to the utmost limits of practicability. See reverse side for conservation suggestions."

The Booster clubs of Missouri Pacific employees lent their aid in putting the idea across, and, in the larger cities, speakers from among the employees assisted in the campaign. As a result, thousands of suggestions were received and, importantly, they continue to come in months after the campaign started, indicating that the interest is being maintained. Each suggestion, regardless of merit, is acknowledged by a letter from President L. W. Baldwin.

A surprising number of the suggestions have been good and have been adopted. Many of the suggestions recommend conservation measures that were supposed to be standard practice on the railway and these, too, have had their value in indicating which of the rules have not been sufficiently broadcast and explained so that everyone understands them.

The suggestions are all turned over to the office of the director of public relations, where the idea originated. Here they are numbered, to save the originator any possible embarrassment involved in the use of his name. They are then divided between the departments concerned and sent to the heads of the departments involved. These officers either adopt the suggestions if they are practicable or explain why they would not work. In each case, a further letter is sent to the employee explaining what has happened to his suggestion.

The MAN WHO RELAXES
- in his conservation of Materials and Supplies needed for Defense -
WASTE
SAVE FOR DEFENSE
- IS HELPING THE AXIS !

The Missouri Pacific Has Used Many Posters Such as This In Promoting Conservation of Materials

Sample Suggestions

The following suggestions are selected at random as indicative of the type of replies received:

Buffing the face of spike mauls after they are worn down not only saves the tool but also saves spikes, as a properly faced maul will not slip and bend spikes. The buffing can be done simply with any tool grinder.

Track shovels should never be used to hold up ties.

More company envelopes than necessary are ruined by being carried around in foremen's pockets without being used.

Straightening the ends of box cars before installing end linings will save lumber by eliminating the need for fillers.

Two-penny nails should be supplied to agents for nailing slats in cars instead of four-penny nails, which are more expensive, too large for the purpose and frequently split the laths.

Do not cut a large piece of metal because it is handy. Look for a smaller piece that will do just as well.

Rubber hose and extension light cords can be shortened from the standard lengths of 50 and 100 ft. and made only long enough to suit the needs in the particular place they are used.

Use old flues for pilot bars instead of flat steel bars.

Do not drive 7 or 8 nails in stow braces in merchandise cars when 2 or 3 nails are sufficient to hold.

Hoist cables on cranes, coal chutes, etc., last much longer when properly lubricated with cable dressing.

Much unnecessary overhead iron and steel work in shops can be taken down and used for war production.

Buy cheap whitewash brushes instead of using expensive paint brushes for whitewashing.

Mucilage or paste can be used to hold files together instead of clips or pins.

Review all forms to determine which can be cut down to smaller sizes to conserve paper.

Cabooses are being over-supplied with fuses and too many fuses are being used unnecessarily by trainmen.

Train registers for branch lines are two or three times larger than necessary.

In addition to these, several hundred suggestions were received calling attention to individual forms and reports which the employee believed to be unnecessary. These are being studied, and, if the form cannot be eliminated, the employee is told why.

The campaign has produced such good results that it will be continued indefinitely. One of its aspects not actively concerned with the railway industry but dealing definitely with victory was a county scrap campaign proposed by the Missouri Pacific agent in each county seat town served by the railway. To further a general scrap collection, the M. P. in each case offered the use of its property as storage space. The plan received much publicity in county seat newspapers and resulted in the collection of much scrap.

Reorganizations Do They Restore Credit or Destroy It?

The nation's need for all its railroad capacity having been demonstrated, where is the evidence that the asset value of used and useful plant is too "obsolete" to be capitalized?

By Fairman R. Dick

THE main purpose of a railroad reorganization is to restore credit. It is a radical statement, therefore, to say that the application of our present reorganization theories will tend to destroy credit. I make that statement, and hereinafter I set myself to prove it. Up to now, reorganization has completely failed to restore credit—in spite of dramatic demonstration that the total capacity of our railroad plant is a national necessity—and that the national interest requires that this plant be preserved, maintained, improved and enlarged for our future needs. How is this nationally-indispensable service to be continued if investors with the capital this industry must have, continue indefinitely to withhold it?

In order more readily to comprehend the reorganization problem, it is well to bear in mind the essential features of the railroad picture as a whole. The railroads, the largest form of corporate enterprise, have been regulated for a long time. The body of this regulation as it existed in the decade prior to 1920 was recognized as preponderantly and unwisely restrictive. Credit and earning-power were showing signs of deterioration. For this reason, the Transportation Act of 1920 was enacted, which established a new and more constructive pattern of regulation. In the words of the Supreme Court, our railroads were placed under "the fostering guardianship and control of the Commission." The powers of the Commission were broadened to include, among other things, control over the construction of new mileage, the abandonment of mileage, the issuance of securities. As for rates, the powers of the Commission were extended and, besides these additional powers, the Commission was given the duty of maintaining rates at a level that would safeguard credit. To guide the Commission in the exercise of this duty, a "yardstick" was established, based on the valuation of railroad properties. Then, in 1933, the Commission's powers were further broadened in connection with railroad reorganizations. Under Section 77 of the Bankruptcy Act the Commission was given power to facilitate reorganization, and to protect both the public and private interest therein.

Good Intentions, but Not Good Results

In spite of all this purposive and carefully designed legislation, and "the fostering guardianship and control of the Commission," the results have not been as intended. More roads are in bankruptcy than ever before; roads have remained in bankruptcy for year after year; few roads have been reorganized; and a large proportion of bankrupts are tied up in complex and bitter litigation. At the same time, credit—as shown by security prices—has had the greatest collapse on record; and no improvement appears in sight. Even when reorganizations are effected, satisfactory credit is not restored.

Only rarely are the factors that have occasioned a morbid condition so simple as to permit crystallization into one solitary cause. I believe, nevertheless, that the primary cause of our railroad credit and reorganization difficulties is the attempt to base the capitalization of reorganized railroads on a valuation arrived at by an examination of past and present earnings, and a forecast of future earnings—disregarding the cost of property that must be operated, maintained and improved in order to serve the public.

Regardless of whether such an earning-power method of valuation for capitalization purposes is applicable to non-regulated industries, it is not logically applicable to a regulated industry where the earnings are restricted by limitations on rates, and reduced by compulsory services.

Threat to "Prudent Investment"

"By investment in a business dedicated to the public service the owner must recognize that, as compared with investment in private business, he cannot expect either high or speculative dividends but that his obligation limits him to only fair or reasonable profit." (Dayton-Goose Creek Ry. v. U. S. 263 U. S. 456 at p. 478 (456,481)

"If such limitations are to be imposed, plainly stability of income and return is a prime requisite." (O'Fallon Case, ICC Finance Docket 4026, Page 30)

When the foregoing statements were made by the Supreme Court and the Commission, it was believed that railroad investors could be assured of this stability of income on an investment prudently made. A limitation of profits to a fair and reasonable figure, therefore, did not injure credit but probably improved it.

During our unprecedentedly long and serious depression at a time when highway competition was in process of development and expansion, stability of railway income vanished. Railroad earning power had a serious decline, and for many years remained in a state of collapse. Unfortunate as this development was, the investor in railroad securities should have been justified in anticipating the final emergence of the country from the depression and the adjustment of the industry to the changed competitive conditions. Application of the present dominant theory that capitalization should be reduced if forecasts of future earnings for a road are sufficiently pessimistic, removes this hope. Many securities issued with the approval of the Commission—and today representing property used and useful in the public service—are now, in whole or in part, to be permanently wiped out, on the theory that pessimistic forecasts of future earnings require it in the public interest.

If a large amount of railroad assets were no longer

used or useful in the public service, there could be no method of protecting these investors—but, be it noted, the proposals to wipe out these investors are not based on any analysis of the assets which are considered to have become worthless. Forecasts of future earnings of a road as a whole have no direct bearing on the capitalizable value of individual items of property in use. As far as usefulness in the public service is concerned, I have found no evidence in the record in any of these cases to justify a determination of specified worthlessness.

This expansion of the "prudent investment" theory is unsound. It would mean that what is recognized as "prudent investment" would be viewed under a double standard. "Prudent" from the point of view of investment would be quite a different thing from "prudent" from the point of view of serving the public. "Prudent investment" was considered to be not only a limitation but a protection. A continuation of the limitation part of the theory and abandonment of the protection part of the theory would in all probability mean the end of credit in a regulated industry.

The value of a railroad for capitalization purposes should, therefore, not be based on what it has earned in the past under regulatory restrictions, nor what it might be expected to earn in the future under regulatory restrictions. It should be based on some formula involving a physical valuation of assets used and useful in the public service. Pessimistic forecasts, or even optimistic forecasts, as to what these assets may be expected to earn in the indefinite future have no place in determining capitalizable value. A capitalization that represents prudent investment is based on firm ground. Such a capitalization accurately represents the property on which the railroad should be permitted to earn a fair return if, under competitive conditions, it can do so. Forecasts as to the chances of its succeeding are not only largely guesswork, but are wholly unnecessary and should be eliminated from the problem, especially when these forecasts are definitely final and extend without limitation in time. Forecasts of a few years ahead, or even months, are often unreliable. Forecasts of the future earnings of a road as a whole with no limit of time, to be used as a base for a recapitalization which permanently wipes out investors are an absurdity.

When the Norfolk & Western was in bankruptcy a number of generations ago, our northwestern roads had the highest credit of any roads in the country. Today, when the Norfolk & Western has the highest credit of any road in the country, our northwestern roads are in a state of credit collapse that now appears chronic.

Changes such as this are continually occurring in greater or less degree all over the country. Nobody can forecast such changes. In the Western Pacific reorganization the Commission forecast the most gloomy future for the Western Pacific. Today this road is carrying over double the traffic that it carried even in 1929. It may be argued that the war has brought this rapid change. What if it did? Many changes will be brought about by our present war and other wars, and many of these changes will persist in the future. What the future industrial development of the Pacific Coast may be no one knows. It is conceivable, not only that the future of the Western Pacific may be bright, but that the demand for rail transportation in this territory will be so great as to necessitate building another Western Pacific.

How Reliable Are I. C. C. Forecasts?

Forecasts, even by experts, vary with the times and general economic atmosphere. During prolonged periods of depression forecasts tend to be pessimistic; a resumption of maximum industrial activity is practically inconceivable; and during prolonged periods of prosperity an industrial collapse such as that of the last ten years is equally unthinkable.

The influence of general conditions on forecasts is illustrated by an examination of past forecasts by the Interstate Commerce Commission. In 1920, when the railroads were placed under the "fostering guardianship" of the Commission, increases in rates for the purpose of restoring earnings and credit were authorized to offset increased costs brought about by the war. But in the western district, and especially in the region known as Western Trunk Line territory, these increases were not sufficient to produce the 5¾ per cent that the Commission regarded as necessary and desirable. So in 1925 the carriers in the west applied for permission to increase rates. The Commission refused this permission, stating that there was no emergency as stated, and fore-

The Author

Blackstone Photo

Fairman R. Dick is one of the country's leading authorities on railroad finance. Member of the New York firm of Dick & Merle-Smith—well known in the marketing of railway securities—Mr. Dick was, from 1934 to 1938, adviser on finance and credit to the Association of American Railroads. He has spoken and written widely, and with great penetration, in this complex and nationally-important field of inquiry.

Now that the question of "planning," both for the successful waging of the war and securing a prosperous peace, is in the minds of all thoughtful men who are concerned with the transportation aspects of national well-being, the vital issue so cogently raised herein by Mr. Dick cannot longer be safely ignored, or postponed.

cast an improvement in earnings. Other rate cases followed this general rate case, especially in Western Trunk Line territory, where earnings were averaging only about 3 per cent on investment. The dangers in this situation were impressed on the Commission as vigorously as possible. It was argued that the margins of safety were dangerously thin, that financing by stock was impossible and that improvement programs were necessarily lagging.

Nevertheless, the forecasts of the Commission continued optimistic. Conditions were expected to get better, and, in the opinion of the Commission, corrective action on rates could be delayed without danger. Even after the depression got under way, the Commission's forecasts continued optimistic. In fact, as late as the middle of 1930 the Commission regarded railroad earning power and credit so strong as to permit an important reduction in rates and earnings. This was the Grain Case of 1930 (No. 17,000) decided July 1. The record in this case showed Western Trunk Line railroads earning less than 3 per cent on investment in 1927, even before the onset of the depression and the carriers in the northwestern region averaging substantially less than 4 per cent for many years; nevertheless, the Commission's forecasts continued optimistic, both as to the strength of the railroads to withstand these low earnings and the efficacy of further proceedings to increase earnings if the need became more urgent. In the words of the Commission, "a failure of the present revision to afford adequate revenues will prompt further proceedings." (Page 698.)

This optimistic forecast of the Commission seemed so at variance with the facts that the railroads asked for a re-hearing which was refused in April, 1931, when the dangers had become increasingly obvious. The reduced rates, however, were never made effective because the Supreme Court was appealed to and, on January 4, 1932, ordered the Commission to re-hear the case.

It is interesting to note that during the short interval before the Supreme Court ordered the Commission to reconsider its views, its extreme optimism had been replaced by extreme pessimism. Whereas in April, 1931, the Commission regarded the railroad situation as so strong that a reduction in rates was warranted, before the end of that year and before the Supreme Court had rebuked the Commission for over-optimism, the Commission had reached the opinion that the situation was so desperate as not even to warrant an effort to improve revenues by any substantial increases in rates. (Ex Parte 103.)

The unreliability of Commission forecasts as a determinant of rates in the over-optimistic atmosphere of the 1920's emphasizes the danger of relying on forecasts from the same source and for the same purpose made in the depression atmosphere of the 1930's.

Regulated Earnings Are Not "Earning Power"

There is another conclusion to be drawn from the over-optimistic forecasts of prior years: That is, that the earnings of those years were unduly restricted by regulation and cannot therefore be accepted as evidence of earning power. Earnings of the Western Trunk Line railroads during the late 1920's of only 3 per cent on investment do not prove a weakness in earning power, because the Commission refused permission to these roads to increase their earnings by raising rates. These low earnings, therefore, are not evidence of *weakness* in earning power at that time, but of over-optimistic views of the Commission as regards the *strength* of earning power at that time.

It must be recognized, moreover, not only that pre-depression earnings should be discarded as evidence of "earning power," but also that the earnings in the ensuing depression years are equally inconclusive. By the time (late in 1931) that the Commission had reached the conclusion that its optimism was unjustified, it swung the pendulum to the opposite extreme, namely, that conditions were so desperate as to make it impossible to improve sub-normal earning power through increases in rates. Moreover, the prolonged period of pre-depression starvation affected so adversely the physical condition and general economy of Western Trunk Line roads that, by the time the pit of the depression was reached, their earnings had reached the vanishing point. In 1932 the operating earnings of the northwestern region were actually less than zero, although in the remainder of the country the railroads as a whole earned over $300,000,000. The depression earnings of these Western Trunk Line roads, therefore, cannot be accepted as evidence of future earning power.

The Nation's Bankruptcy Center

It is in Western Trunk Line territory, where the optimism of the Commission was greatest, that its forecasts have now become most pessimistic. This territory has become what might be called the bankruptcy center of the United States. It was testified in the St. Paul hearings that railroads with important mileage in this territory were in bankruptcy with an overall mileage of 43,000 miles as compared with a total of 25,000 miles of road in bankruptcy in all the rest of the country. The fact that this bankruptcy center is located in what was the optimism center of the late 1920's does not prove, of course, that these bankruptcies were brought about by this optimism—but it is highly probable that this is the case, because the record shows that contributing factors (such as relatively excessive debt or relatively excessive losses in traffic) are lacking.

The evidence appears convincing, therefore, that the financial disaster focused in this territory is directly related to the Commission's over-optimism in the 1920's—and it is not surprising that the pessimistic forecasts of future earnings and values reached their maximum in regard to roads in this territory such as the St. Paul, the North Western and the Rock Island. An exception is the Western Pacific which is in the western district but not in Western Trunk Line territory.

Additional evidence as to the probable errors of forecasting and the unreliability of accepting past earnings as a measurement of earning power is shown by a brief account of a forecast made by the Commission in 1936.

In March, 1935, the Commission authorized an important increase in rates, an increase estimated to yield about $200,000,000 in revenues. This increase was authorized on a temporary basis and was to terminate on June 30, 1936. Upon application of the carriers the expiration date was extended to December 31, 1936, and shortly prior thereto the railroads petitioned for a further extension. In the Commission's decision the railroad position was summarized as follows:

"In this petition it is alleged that, despite their expanding traffic and consequent financial improvement, petitioners are not in a position to withstand the loss in revenue which would follow the elimination of the emergency charges while the new proposal is under consideration. (Ex Parte 115, Page 567)

The forecast of the Commission was wholly at variance with the forecast of the carriers. This is what the Commission said:

"The unmistakable conclusion from these figures is that the emergency which we undertook to meet in our original decision in March, 1935, does not now exist. *A continuing revival of industry appears likely to result in a further increase in traffic,* and *no sharp general increase in operating*

expenses is immediately in prospect." (Ex Parte 115, Page 572) (Emphasis supplied)

It will be noted that the Commission forecast further increases in traffic and no increase in operating expenses. It would be hard to imagine any careful forecast which was proven so completely wrong almost before the ink was dry on the decision. Early in 1937, increased wage costs took place in general industry resulting in increased prices for materials, and in the summer of 1937 the railroads were burdened with an important increase in wages. Practically simultaneously business activity started to decline and in the autumn of 1937 railroad traffic declined precipitately. The pace of this decline broke all previous records.

As a result of this erroneous forecast of the Commission, railroad earning power in the early months of 1938 was practically extinguished. For the first four months of 1938 the carriers in the Western District suffered an actual operating deficit and there were likewise operating deficits in the New England region and the Great Lakes region. In March, 1938, the Commission approved increases in rates so that earning power was somewhat restored. But it is obvious that the actual earnings of 1937 and of 1938 must be rejected as a measure of railroad earning power and it is likewise obvious that forecasting is a hazardous business.

Depression Psychology Distorts the Evidence

A symptom of depression psychology is the interpretation of evidence as pessimistic, which, under a more normal mental state, would not be so appraised. For instance, one of the stock arguments used to prove loss of railroad value is the loss of business to the trucks. This evidence was ignored during the '20's. Short-haul package business, bearing high rates, has always been more or less of a sideline for the railroads. Heavy, long-distance mass transportation has always been the backbone of the railroad business—and while the railroads were losing this profitable sideline in the 1920's the effect on earnings was slight because our heavy industries were active and heavy freight was moving in volume. Moreover, the operating efficiency of our railroads was rapidly improving. Evidence of losses to the highways was available prior to the depression, but it was not until general business collapsed that it was regarded as important.

A study of the record of the St. Paul illustrates this situation. Less-than-carload freight is typical of the traffic vulnerable to highway competition. From 1919 to 1929 the percentage of tons of less-than-carload freight carried by the St. Paul declined from 6½ per cent of total tonnage to 2.9 per cent. This fact was, of course, known to the Commission, but it was not regarded as evidence calling for a less confident view of the future. During the depression, however, when the percentage of less-than-carload tonnage dropped from 2.9 per cent of the total in 1929 to 1.7 per cent in 1939 this relatively small loss was regarded as evidence that a large percentage of railroad investment was permanently worthless. It is true that the rates on less-than-carload traffic average about four times the average revenue per ton-mile of one cent, so the revenue effects of this loss of tonnage are greater than is represented by the mere tons involved; likewise, rates were reduced to retain traffic. Also, this traffic is much more expensive for the railroads to handle than is carload traffic. It loads much more lightly per car, and all the expense of loading and unloading (and, more recently, of store-door collection and delivery) is borne by the railroad; with carload traffic these very costly services are provided by shippers and consignees.

In retrospect, it seems clear today that the importance assigned in the '30's to the loss by the railroads of package traffic was occasioned primarily by the fact that the heavy industries supplying the bulk of railroad traffic were in extreme collapse. It is highly probable that if the heavy industries had been as active in the 1930's as in the 1920's, truck competition as a factor in the value of railroad property would have continued to be ignored in the '30's as it was in the '20's.

Traffic Diverted in '20's, but Credit Held

The same psychology holds true in regard to passenger business. For most roads this traffic has always been more or less of an incidental sideline, and, so long as heavy industry was active in the 1920's, the loss of passenger business to the buses and private automobiles did not dampen the optimism of the Commission. In 1919, for example, over 20 per cent of the revenues of the St. Paul came from passengers. By 1929 the percentage had dropped to slightly less than 10 per cent without the Commission recognizing this in any way as a factor to cause concern for the future. But a further drop during the 1930's from 10 per cent to 7 per cent brought forth the gloomiest prophecies. It would seem to be obvious that the reason for this gloom was not the loss of passenger business, but the collapse in heavy traffic. If heavy traffic had continued to move in volume, the passenger losses in the 1930's undoubtedly would have been regarded as no more important than the losses in passenger traffic which were occurring in the 1920's.

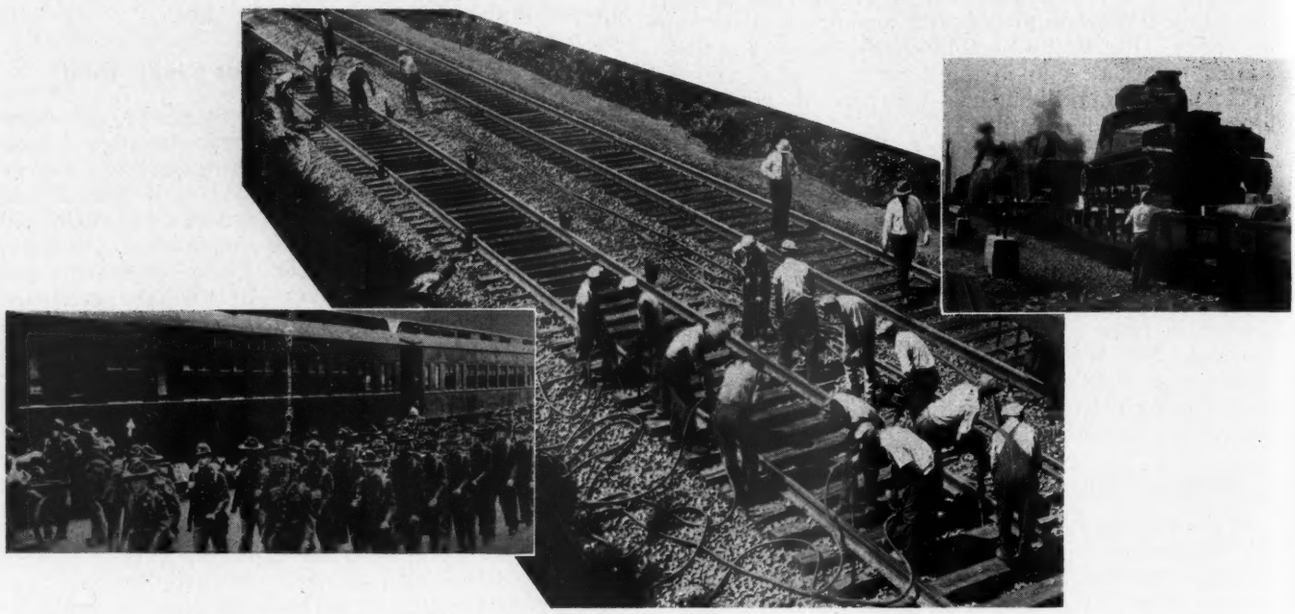
Probably the clearest evidence of the abnormality of depression psychology in our reorganization cases is the complete failure to give any weight whatsoever to the unprecedented improvement in the efficiency of operation that has been taking place. During the 1920's, gains in efficiency were a most important factor in justifying optimism and were a factor frequently discussed, but in the 1930's, continued gains in efficiency were completely ignored.

It is, of course, true that measurements of improvement in efficiency are more difficult when traffic is intensely depressed. Measuring efficiency with different levels of traffic is somewhat like comparing fractions with different denominators. Nevertheless, satisfactory measurements are practicable and they showed improvements that would have been regarded as highly important during more normal times, especially as it could have been demonstrated that the pace of improvement in the years after 1929 was faster than before 1929. In 1941, freight and passenger volume approximately equalled that of 1929, thus greatly facilitating a measure of the improvements that had taken place in efficiency. It is clear now that the pace of improvement during the 1930's was well over twice as fast as in previous decades. In fact, it now appears that the improvement in efficiency from 1929 to date may be almost comparable to the improvement that took place in the entire period from 1900 to 1929.

I have examined many of the voluminous reports and decisions of the Commission to see what weight is given to this exceptionally favorable development. I cannot find it even mentioned.

[*The second and concluding installment of this analysis will appear in next week's* RAILWAY AGE. *In it, the author examines further the evidence of the degree of accuracy the I. C. C. has attained in its earnings estimates. He raises a question of the honesty of capitalization based on earning power rather than assets, and points out that few persons deny the public interest in avoiding an earning-power base for capitalization, if such a figure* EXCEEDS *the assets.*—EDITOR.]

Roadmasters Face War Problems at Annual Meeting



Intensive program, participated in by representatives of the WPB, ODT, AAR and army, considers special responsibilities of maintenance men in the interest of the war effort

Part I

WITH a feeling of greater responsibility under present war-time conditions than ever before, born of an opportunity for greater service to their railways and the country than at any time in the past, members of the Roadmasters' and Maintenance of Way Association, held their fifty-seventh annual meeting in Chicago, September 15-17, with an intensive program keyed throughout to the immediate, and for the most part, pressing, problems confronting the maintenance of way forces of the railways.

Presided over by A. B. Hillman, president of the association, and engineer maintenance of way of the Chicago & Western Indiana and the Belt Railway of Chicago, each of the seven sessions of the meeting was crowded with addresses, technical reports and open discussions, the speakers including Otto S. Beyer, director, Division of Transport Personnel, Office of Defense Transportation, Washington, D. C.; W. W. Kelly, director, Section of Materials and Equipment, Office of Defense Transportation, Washington, D. C.; B. C. Bertram, director of railway salvage, War Production Board, Washington, D. C.; W. C. Kendall, chairman, Car Service Division, Association of American Railroads, Washington, D. C.; and Brig. Gen. Carl R. Gray, Jr., general manager, Military Railway Service, St. Paul, Minn.

The meeting was opened by C. E. Johnston, chairman, Western Association of Railway Executives and associate director, Western region, Office of Defense Transportation, Chicago, who sounded the keynote for the entire program in a challenge to maintenance of way men, in the face of many difficulties, to "maintain the life-line of the nation." Addressing the group at a special session on Tuesday night, Gen. Gray described the purpose, organization and work of the Military Railway Service. Speaking at the morning session on Wednesday, Mr. Kendall discussed The Use of Cars and Locomotives by Maintenance of Way Forces in These Days of Maximum Traffic Demands. Mr. Kelly, on Wednesday afternoon, discussed The Outlook for Track Materials, while, at the same session, given over entirely to consideration of the problems being presented by a scarcity of materials, Mr. Bertram spoke on Track Scrap —Its Importance in Our National Program. At the closing session on Thursday, Mr. Beyer spoke on Our Track Labor Problems. Others who addressed the meeting were F. R. Layng, chief engineer, Bessemer & Lake Erie, Greenville, Pa., who spoke on Our Responsibilities as Track Men in a Time of All-Out War; C. M. Chumley, engineer maintenance of way, Illinois Central, who, speaking of scrap, told what his road had found in an intensive drive; and Elmer T. Howson, western editor, *Railway Age,* who, at the closing session, reviewed and commented upon the many constructive ideas brought out and developed during the meeting.

Forming the framework of the program, technical reports were presented by six committees on Extending

the Life of Rail and Fastenings; The Control of Injuries Under Today's Changing Conditions; The Maintenance of Roadway Equipment; Recent Developments in Tamping Practices; Highway Crossing Maintenance and Construction; and The Use of Track Grinders.

Supplementing the activities of the meeting proper, the Track Supply Association presented a highly constructive exhibit of maintenance of way materials and equipment, as is reported in the news columns of this issue. Both the meeting and the exhibit were held in the Hotel Sherman. Two hundred and seventy-two railway officers registered their atendance at the meeting, the total attendance, including exhibitors, being more than 350.

New Officers Elected

In the election of officers at the closing session of the meeting, E. L. Banion, roadmaster, Atchison, Topeka & Santa Fe, Topeka, Kan., was advanced from first vice-president to president; H. E. Kirby, assistant engineer, Chesapeake & Ohio, Richmond, Va., was advanced from second vice-president to first vice-president; J. M. Miller, trainmaster, Western Maryland, and a director of the association, was elected second vice-president; and E. E. Crowley, roadmaster, Delaware & Hudson, Albany, N. Y., was re-elected treasurer. Four new directors were elected—A. B. Chaney, district engineer, Missouri Pacific, Little Rock, Ark., for a term of four years; F. E. Schaumburg, roadmaster, Chicago & North Western, DeKalb, Ill., for a term of four years; Ray Marshall, district roadmaster, Great Northern, Superior, Wis., for a term of two years to fill the unexpired term of P. Chicoine, retired roadmaster, Canadian Pacific, resigned; and S. J. Hale, assistant superintendent, Norfolk & Western, Roanoke, Va., for a term of one year to fill the vacancy created by the elevation of J. M. Miller to second vice-president.

The report of the secretary, A. G. Shaver, showed 836 members of the association, including 44 new members taken in during the year.

Following are abstracts of the comments of those bringing greeting to the Roadmasters from other associations; of the president's address; of the opening address by C. E. Johnston; and of two of the committee reports. Separately in this issue is presented the address by W. W. Kelly, on The Outlook for Track Materials. Other reports and addresses at the meeting will be covered in the issue for next week.

Clarke Warns on Materials

H. R. Clarke, president of the American Railway Engineering Association and chief engineer maintenance of way of the Chicago, Burlington & Quincy, brought greetings from his association, and in his remarks, while expressing the greatest confidence in the willingness of maintenance of way men to do their part to meet the increasing demands of the country's war effort, viewed with deep concern the tendency in some quarters in Washington to expect that the railways can continue indefinitely to maintain their remarkable record of performance to date, no matter what future restrictions are imposed on their ability to secure their minimum essential requirements in materials and equipment. He spoke in part, as follows:

"Today we are at war with the most militaristic and ruthless nations of modern times. Our task now is to win, as quickly as possible, and with the utmost decisiveness. The railways have a tremendous load to carry, a vital job to do, and we who are responsible for maintaining the tracks that serve war industries and carry war traffic, troops and supplies have an important part in the total effort required.

"Not long ago Joseph B. Eastman said, 'Maintenance must not be allowed to fall into arrears, and no one has a heavier and graver responsibility than the men who are in charge of this work.' Certainly no one is more fully alive to what will happen if maintenance should fall too far in arrears than are the men on the firing line, who are carrying the responsibility Mr. Eastman was speaking of. No one knows better than they the difficulties that confront them and none is more grimly determined that they shall not fail.

"So far the railroads have done a splendid job. That is generally recognized and the roads have been complimented by many in the best positions to know just what has been done. The fear has been expressed by some that we might become self-satisfied and complacent, and feel that our part was done—our battle won. I have no fear that such an attitude will develop. That has not been our training. We believe that no matter how well done the job, it can be done better. If failure should come, it will not be due to lack of determination and effort on our part.

"There is one thing which does give us all deep concern. As I have said, the railroads have been complimented on the splendid job they have done, and confidence has been expressed that they will continue to deliver the goods. Some in authority know that to do this the railroads must have a reasonable amount of vitally needed materials and be protected in their labor supply to the same extent as other essential war industries. Mr. Eastman and some of his staff know this, and in them we have influential friends at court. But is that enough? A member of the War Production Board said recently, 'But the railroads have met successfully all demands imposed on them up to now as a result of the war program, and I am supremely confident that the job will continue to be done, no matter what further restrictions are necessary.' I wonder if those with such thoughts ever heard that 'you cannot make brick without straw.' Every railroad employee will do his utmost to deserve and justify the confidence expressed, and I believe the situation can and will be presented in such a way by those who do understand it that the tragic phrase, 'Too little, too late,' will not apply as regards maintenance needs."

R. E. Dove, assistant engineer, Chicago, Milwaukee, St. Paul & Pacific, and president of the American Railway Bridge and Building Association, brought greetings from that association, commended the Roadmasters for their long record of achievements, and urged them to still greater effort in the interest of the railways and the country in this time of national emergency with its many new and difficult problems. Speaking in behalf of the Track Supply Association, R. M. Blackburn, Buda Company, president of the association, and Lewis Thomas, Q & C Company, secretary-treasurer of the association, offered the fullest co-operation on the part of members of their association in meeting the needs and solving the many new and difficult problems confronting maintenance of way men.

President's Address

In his presidential address, President Hillman spoke of the long and enviable record of service of the association, reviewed its activities during the last year, and saw for maintenance men individually, and for the asso-

ciation, grave responsibilities in the months ahead. "We are now faced with the grave responsibility of keeping our railroads functioning to meet the war effort," he said. "In our country's 'all-out' effort to hasten the complete destruction of the Axis powers, the railroads are playing a vital part in the transportation of men and materials, and the maintenance department is being called upon to keep the roadbed and tracks of the railways in condition to handle promptly and safely the greatest traffic in history. This must be done with a decreasing supply of man-power, with limited materials, locomotives and cars, and with no interference with the operation of trains. This new era in railroading makes it more important than ever that our association meet here to provide all possible assistance to its members in solving the new problems that are confronting them daily. Through our meeting we will increase the efficiency of the maintenance of way department in this period of war, and thereby increase the speed and safety of railroad transportation."

Johnston on War Duties

C. E. Johnston, chairman, Western Association of Railway Executives, and associate director, Western region, Office of Defense Transportation, set the keynote of the meeting at its opening session when he said that the greatest task facing the country today is the winning of the war; that the railroads are indispensable to that end; and that maintenance of way men must play a vital role. He commended the Roadmasters for their courage and urged them to still greater activity and aggressiveness in the interest of solving the problems confronting the maintenance of way department, which he characterized as "one of the most important departments on the railways."

Early in his address, Mr. Johnston emphasized the importance of the railways in the emergency that faces the country; cited the record-breaking load they are already carrying; and predicted that the months ahead will bring still greater demands and problems to be solved. Relative to these matters, he said in part, as follows:

"In this greatest crisis in the life of our nation, the railroads occupy a particularly important part. They play a dual role. Essential to the economic order of our people, vital to their comfort, their health and their very lives, the railroads are no less essential, no less vital, no less indispensable to our armed forces and their prosecution of the war. As has been said repeatedly, this is a battle of production. Transportation is the beginning and the end of our industrial production, in war as well as in peace. In the winning of this war, the railroads are the first line of production. Our patriotic duty and job as railroad men is to keep that line open—to operate the service of supply. I know that we will not fail, no matter how great the task.

"And the task will be the greatest and the most difficult we have ever known. Already, the railroads are faced with the heaviest service demands ever made upon them. So heavy, indeed, have been these demands that thus far this year they have performed a revenue transportation service amounting, on the average, to the movement of more than a million tons of freight for the distance of one mile every minute of every day. That is the greatest transportation job ever carried out in the history of the world.

"In passenger service, the increase in demand upon the railways has been even more striking. The peak level of passenger business was reached in 1920, following which very great declines occurred. Last May, however, the 1920 level was exceeded for the first time, and current figures of revenue passenger miles show increases of almost 80 per cent over 1941 and 125 per cent over 1940.

"With these increased demands upon them, the railways must pay first attention to the movement of troops and vital war materials. And the movement of war materials is a much larger job than it was during the last war. Today, it takes more than half again as much in the way of materials and supplies to keep a fighting man in the field. Likewise, it takes a large volume of transportation to provide all of the trucks, tanks, jeeps and planes that are used in modern war, and to keep them supplied and running and flying. Every change that has been made has increased the transportation load.

"Some idea of the magnitude of the military demands upon the railways may be gained from the fact that the movement of an infantry division of about 15,000 men and its equipment requires 65 trains, with a total of approximately 1,350 cars. The transportation of the men and the 3,000 vehicles comprising an armored division requires about 75 trains of 28 to 45 cars each, depending upon the length of the cars."

Speaking of the special problems that confront maintenance men in the shortages of materials and manpower, and of the added responsibilities resting upon them, Mr. Johnston continued in part:

"Our task in winning the war will be the greatest and the most difficult we have ever known. It will be even greater and more difficult tomorrow than it is today. Your part in the struggle—the safe and adequate maintenance of the railway roadbed and tracks—is second to none in its importance.

"In spite of the increased volume of traffic ahead, there will be shortages both in roadway maintenance materials and in the trained labor for applying these materials. We will be called upon to do more and more with less and less. We will have to do the best that we can with what we have, and our very best will be none too good.

"Essential though the railroad industry is, we can anticipate, nevertheless, as the war goes on, that more and more railway men, including those in your department, will be called for active service with our armed forces. We can anticipate, likewise, that the supply of men who normally would be available for railroad employment will be depleted through this same cause and through the demands of other war industries. One of the most important elements of our job today is to look to the future and to make all possible plans to meet, as best we can, this probable shortage of trained manpower. This will test our resourcefulness, our energy, our driving power and our patriotism. In my judgment, there will be no question as to the ability of maintenance men to meet this acid test, because I know the 'stuff' of which they are made.

"The Office of Defense Transportation is making every effort to see that the railways obtain their essential requirements of materials. But, at best, the most that can be hoped for is a bare sufficiency in many regards. None of you will get all that you want, but we will try to see that all of you get what you absolutely need. At the same time, an important element of your job today is conservation, salvage and the intelligent use of imagination and resourcefulness in the development and use of substitute plans and materials which will enable the

railroads to continue to meet all of the demands made upon them.

Closing his remarks with a challenge, an expression of full confidence that the United Nations will win the war, and that the railroads will have done their part successfully, Mr. Johnston said:

"Our big job today, tomorrow, next week and every day until the surrender of our enemies, is to win the war. Our specific part in this job is to maintain the life-line of the nation. And on that day when we celebrate our final victory, the railroads and every railroad man can look the world in the face and say, 'We did our job—may we and our families, our country and the world live in peace forever.'"

The Use of Track Grinders

Characterizing portable track grinders as one of the important developments in track tools in recent years, and essential to the high standards of track maintenance required today, the committee reporting on the use of these units, of which F. J. Herlehy, roadmaster, Chicago, Milwaukee, St. Paul & Pacific, was chairman, presented descriptions of the different grinders available and then discussed the various classes of work for which each type is best adapted. The more important general types described in the report include the flexible-shaft grinder, the straight-wheel, track-mounted grinder, and the precision-type grinder. The various classes of work described included the grinding of new rail ends to overcome mill tolerance in height; the grinding of rail ends built up by welding; the smoothing off of battered rail ends without welding; the cross-slotting or chamfering of rail ends; and grinding in connection with the maintenance and repair of frogs, crossings, switch points and stock rails.

In recognition of the greater demands being made upon the track by war traffic, the importance of adequate track maintenance under these conditions, and the responsibility of maintenance men in this regard, the committee said that maintenance men must give assurance to the military leaders of the country that their forces and war requirements will be moved swiftly and safely upon tracks that are maintained to proper standards.

Control of Injuries

Holding this subject more important at the present time than ever before, the committee reporting, of which S. J. Hale, assistant superintendent, Norfolk & Western, was chairman, gave it more than ordinary attention, pointing out the new conditions that beset the railways and urging every precautionary measure on the part of supervisory officers and employees to avoid accidents and personal injuries. During the present emergency, it said, the railroads, as well as other industries, are confronted with a serious labor shortage, and each man permanently injured or killed must necessarily be replaced by some able-bodied man who could otherwise serve effectively in the nation's armed forces or in some other essential war industry.

Owing to the heavy demand for men in our armed forces, it pointed out, we are unable to exercise the same discrimination in selecting maintenance of way men that we have practiced in normal times, and will be required to accept men beyond the age limit previously established; also, probably, that it will be necessary to relax to some extent present physical requirements and accept men who are less efficient in safety practices. Nevertheless, it said, in so far as possible when employing men, we should still give consideration to their education, physical condition and ability to adapt themselves to the work they are to perform.

In the education of employees in safety practices, the committee laid particular emphasis upon foremen and supervisors. In this regard, it said in part, as follows:

"Today, and in the future, the safety of the employees on our railroads depends almost entirely on the willingness of supervisory officers to co-operate with management in the enforcement of safety practices. Today, we should realize as never before that we cannot spare the life of a single employee through preventable accidents.

"A supervisor should think of himself as a leader and not simply as a boss who gives orders and deals out discipline, to the end that a specific quota of work is turned out each day. He should also organize his foremen as leaders who will take the tried and proved methods of accident prevention that have been worked out and put them into use to solve today's special accident problems.

"In this age of modern railroading, the foreman should be selected for those qualities that fit him to be a leader and teacher of his men—first, his own education; second, his ability and honest ambition to acquire further education; and, third, his ability to educate the employees under his supervision. It is particularly evident that good judgment and careful supervision on the part of foremen are necessary if accidents are to be avoided.

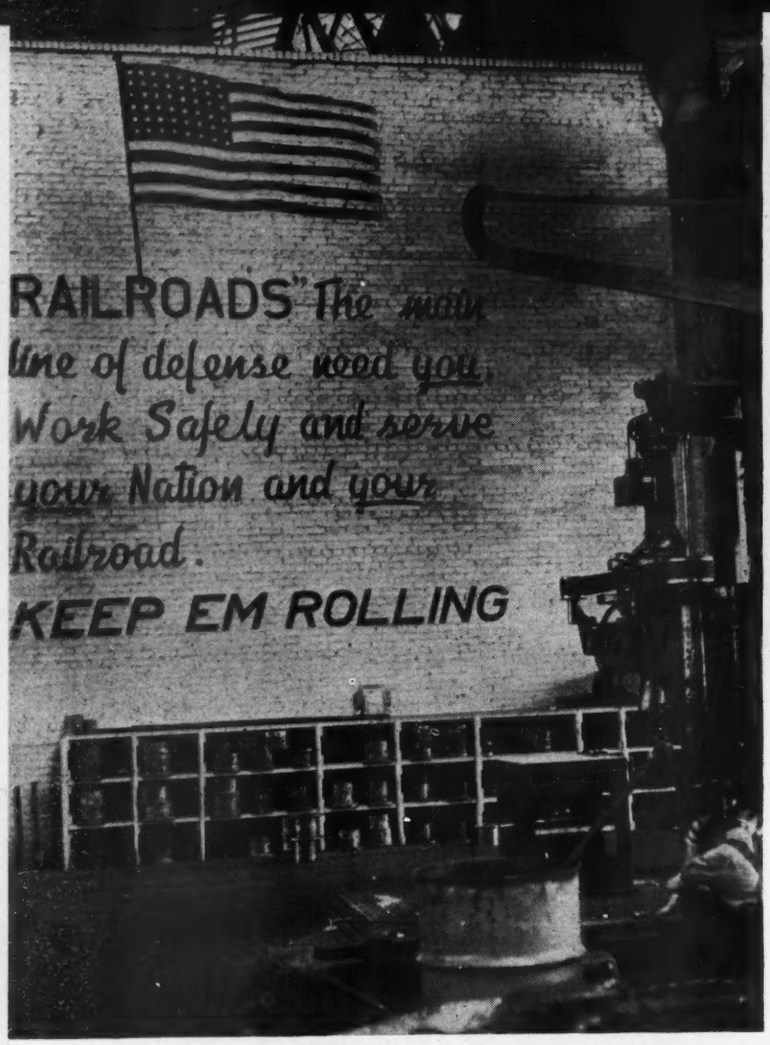
"The foreman should be so trained that safety work will become second nature to him. He should become so accustomed to applying safety principles to his work that his every effort will be performed in the safest manner possible."

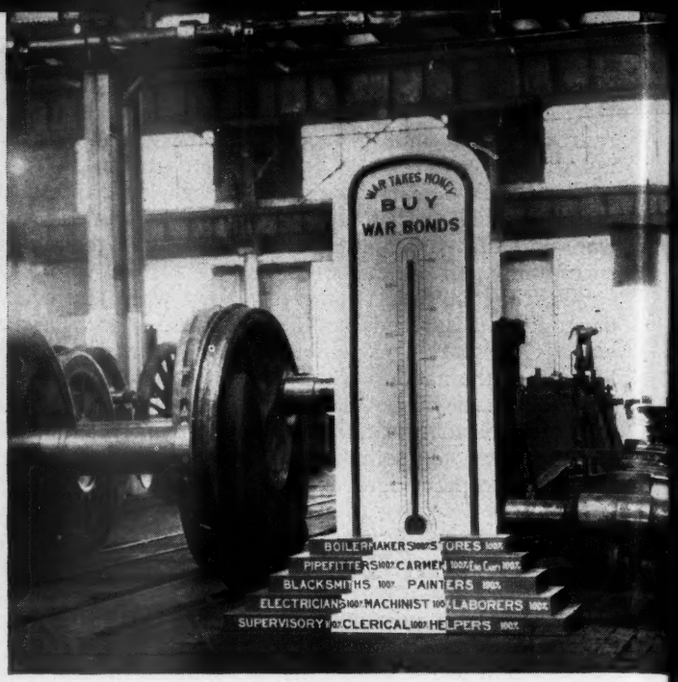
As regards specific means of employee education, the committee emphasized the value of safety meetings and the foreman's part with his men. In this latter regard it recommended the "rule a day" practice being employed on some roads, and in this connection said that men in the gangs should be encouraged to call attention to unsafe employees, unsafe practices, rules being violated, or rules which appear to be inconsistent with practice and need modification.

In the interest of greatest help to the men in the field, much of the report was given over to a discussion of those operations which are the source of the greatest number of accidents, including the handling of rail and ties, the operation of motor cars, the use of worn or defective tools, and the operation of machines. In this connection, the committee offered numerous recommendations in the interest of greatest efficiency and safety.

* * *

An Oil-Burning Switcher Pulls Cars in a Yard at the Brooklyn Eastern District Terminal at Long Island City, N. Y.

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PIPEFITTERS 100% CARMEN 100% Eng. Cars 100%
BLACKSMITHS 100% PAINTERS 100%
ELECTRICIANS 100% MACHINIST 100% LABORERS 100%
SUPERVISORY 100% CLERICAL 100% HELPERS 100%

Employees of the Southern at Finley Shops, Birmingham, Have Before Them Constant Reminders of Their Part in Backing Up Our Country's Armed Forces

Track Materials in the War Effort

By W. W. Kelly*

THE American railroads have an extremely important part to play in the enormous war program of the country. Every railroad officer and employee has a duty which must be performed without failure. Of all railroad men, none are more in the front line trenches than those of the maintenance of way department. Having been in railroad work over 35 years—more than 31 of which were in engineering, construction and maintenance of way, followed by 4 years in purchasing and stores—I believe I know something of their needs and requirements, as well as the sources of their supplies. My more recent work in Washington with the Office of Defense Transportation, and my contacts with the War Production Board, the Army, Navy and other government departments have shown me how difficult it will be to get the materials which we all feel are so necessary to enable the railroads to keep abreast with the growing demands being made upon them by the war effort.

The Office of Defense Transportation was created by executive order of the President on December 18, 1941, and is set up within the framework of the Office for Emergency Management, like most of the other war agencies. It does not occupy the same position as the Director General of Railroads during the last war. At that time, under Presidential proclamation, the director general took over the possession and control of the railroads. The Office of Defense Transportation does not operate or manage the railroads; its functions are to guide, co-ordinate and direct them. It is doing this with the confident hope that Federal ownership and operation will not be necessary.

With the great volume of traffic which the railroads are now handling—involving in many cases different proportions of certain commodities than were handled previously—more cars and locomotives are needed. In addition, they must keep in first-class condition their present ownership of equipment. The problem of maintenance of way men is quite a little different. Outside of some additional plant facilities and, in some instances, additional tracks in areas where a great number of new plants and camps have been constructed, the job is to keep in first-class operating condition facilities that are already in existence. This requires the use of a large amount of materials, the procurement of which creates a serious problem because either the materials or the raw products from which they are made are in direct competition with the requirements of our armed forces. Serious as the results of this competition might be, there is no one, I am sure, but who will say that whatever is necessary for the fighting forces of the war should have preference over all else.

We cannot overlook the fact that this is a war of production and, as such, is dependent largely upon transportation. Raw products must be handled from the points where they are produced to the places where they are manufactured into war goods. The completed products must be transported to the places where they are needed. It is difficult to appreciate the volume of transportation required in this routine. In the case of steel, five tons of transportation are necessary in the production of one ton of finished product. Transportation facilities, therefore, must be kept in such condition that there will be no slowing down in the movement of either raw materials or finished products. Any slowing down, or bottleneck, in transportation would have very serious effects on the war program. Obviously, the vast production of war materials and equipment would be of no avail if the products could not be transported to the points where they are needed.

The outlook for track materials is not at all encouraging. With the exception of ties and ballast, track material is made up of those materials most important to the war effort, and in which serious shortages have already been experienced. Furthermore, there are signs that these shortages will become even more acute than at present. However, on the other side of the ledger, there appears some hope. Much experience has been gained and programs are being formulated which, while calling for more rigid inventory control of materials, are designed to insure a more uniform and co-ordinated flow of materials to points of use.

Ties and Wood Products Difficult to Get

Products of wood are becoming increasingly difficult to obtain. Ties are no exception. There are several reasons why ties are involved. First of all, there is a labor problem. In the past, ties have been produced largely by local labor and small organizations. This class of labor has been gradually absorbed by the armed forces or has gone into other types of defense work, and replacements are not available. Next, is the item of transportation, not only to get the men to and from work, but to move the ties from the woods to concentration points. This is usually accomplished by automobiles and trucks. The rubber shortage enters this picture. Then, too, many ties are now needed directly in the war effort, making a further demand upon the tie industry. Finally, the producers of poles and piling and some small sawmills making lumber are now taking the type of stumpage that formerly went into ties.

There is, in addition, the economic side. The two important costs in the manufacture of ties are stumpage and labor. As yet, no price ceiling has been established on either of these items, while a ceiling has been placed on what can be paid for the finished product. The railroads require approximately 50,000,000 ties annually, and ties are not now being produced to meet those requirements. It is apparent, therefore, that adjustments must be made so that producers will continue to furnish the ties that are so vital to the upkeep of the railroads.

In the case of rails and track accessories, the railways are in direct competition with the combined programs of the army, navy and shipping, which require so much steel. Certain of the steel products required in the war effort are rolled in the same mills that produce rails, tie plates and angle bars, and come from the same semi-finished product of the steel mills.

During the 10 years from 1922 to 1931, an average of 1.74 net tons of new rails were laid in replacements per million gross-ton-miles of freight traffic handled. During the 10 years from 1932 to 1941 inclusive, an average of 0.87 net tons of new rails were laid in replacements per million gross-ton-miles of freight traffic. This was only half the tonnage laid in the preceding 10 years. The years 1932 to 1941 were depression years, when a smaller traffic was handled by the rail-

* Director, Section of Materials & Equipment, ODT. This article is an abstract of an address to the annual meeting of the Roadmasters' and Maintenance of Way Association at Chicago, on September 16.

roads, which, in itself, reduced somewhat the necessity of rail renewals. There was also reflected in this period the benefit of the large amounts of rail laid in the previous 10 years, as well as the effect of the general increase in rail sections. Possibly an average somewhere between the two figures just given would be nearer a correct figure as to the rail that is now absolutely required. The average for the 20-year period, 1922 to 1941 inclusive, was 1.34 net tons of new rail laid in replacement per million gross-ton-miles of freight traffic hauled.

The approved program of new replacement rail for 1942 was 1,260,000 net tons. Of this amount, it is now estimated that 1,041,655 tons will have been rolled by September 30. There were only two years, 1932 and 1933, during the preceding 20 years when a smaller tonnage of new rail was laid in replacement. In two years, 1935 and 1938, practically the same tonnage was laid. It is apparent, therefore, that the amount of new rail to be laid in 1942 is below any average we may assume as being necessary, especially in view of the enormous increases in traffic we are now experiencing over that of previous years.

Preliminary estimates of the amount of rail the railroads think it will be necessary to lay during 1943 indicate a quantity somewhat less than the average for the 10-year period 1932 to 1941 inclusive, but whether that tonnage will be made available is, at this time, problematical. It does indicate, however, the generally good condition of track maintenance on the railroads and that estimates of rail replacement needs have been kept to the minimum.

I am sure everything possible will be done to make available to the railroads what is needed to keep them maintained properly. It will, very likely, not be what the railroads think is necessary, or what they would like to have. It must, of necessity, be based on how little can be used and still be certain there will be no breakdown in vital transportation.

Efforts should be directed to make sure that, in ordinary maintenance work, nothing is overlooked which would in any way result in undue wear and tear on existing facilities. The mistake should not be made of anticipating that a certain piece of track will soon be renewed and that its maintenance can be relaxed, because no one can tell at this time whether materials for that particular renewal will be available. Special emphasis should be placed on seeing that joint ties are kept properly tamped and that all bolts, including those around switches, are properly tightened. Rail welding should be pursued vigorously to eliminate the necessity of rail renewals. Drainage conditions should not be permitted to develop which would in any way add to the problem of track maintenance.

Scrap is a vital war necessity and has a lot to do with the outlook for track material. If steel production is curtailed for any reason, the amount of material for tracks might likewise be curtailed. Scrap, therefore, should become an individual problem with maintenance forces. Every piece of unusable material should get into the scrap pile. At the same time, anything that is reclaimable should be taken care of promptly in order to reduce the amount of new material required. Railroads have done, are doing and will continue to do their full share in the war effort, but they must have the all-out support of their maintenance forces.

Regulatory Bodies No Place for Partisan Zealotry

Chairman Olds of the Federal Power Commission made a speech in the recent New York State Democratic gubernatorial primary campaign, in which he opposed the candidacy of the successful contender, State Attorney General Bennett. The propriety of Chairman Olds' injecting himself into this contest was discussed by Former I. C. C. Commissioner Thomas F. Woodlock in The Wall Street Journal in an article raising fundamental questions as to the behavior and qualifications of regulatory officials. Mr. Woodlock summarized Chairman Olds' speech as follows:

"Mr. Olds' indictment of Mr. Bennett was that he had at one time been private secretary and assistant to the late E. R. Stettinius, former partner of J. P. Morgan & Co., and that later he had favored the granting to the Niagara Falls Power Co. of the right to long term use of additional Niagara water. 'The Attorney-General (i. e., Candidate Bennett),' said Mr. Olds, 'and the company representatives were lined up side by side against the New York Power Authority in a matter vitally affecting the rights of the people of New York to the great power sources in their boundary streams. Mr. Bennett was apparently content to let the companies rent these resources as a substitute for great public developments used to assure the public lower utility rates.' Mr. Olds said he didn't altogether blame Mr. Bennett for his point of view; it was partly accountable for by reason of his Morgan connection in the past. Then he summed the matter up by the following interesting pronouncement:

"'And as the power issue is the symbol, the yardstick by which to measure a candidate's devotion to the principles of our great President, if we cannot depend on Mr. Bennett on power, we cannot be sure of his steadfastness on other vital issues.'"

Mr. Woodlock commented upon Mr. Olds' action as follows:

"Most people will probably agree in the statement that open hostility to the privately operated electric power industry has been one of the principal features of New Deal policies, for the record of words and deeds teems with evidence of its truth. But that is not the point. The point is this: here is the Chairman of a great regulatory commission, the function of which is to balance the rights of private interests with those of the public for the protection of both, a commission required in the performance of that duty to act at times in a judicial capacity, openly declaring himself an ardent partisan with respect to the 'issues' with which the commission has to deal.

"In so doing Chairman Olds formally—though doubtless unconsciously!—disqualifies himself for the office that he holds. This would be true were he admittedly the outstanding 'expert' on the whole subject. He disqualifies himself by the views he expresses as to the office, just as would a Justice of the Supreme Court who in similar fashion on a similar occasion would declare (with Proudhon) that 'private property is theft.' In both cases there would be the admission by a 'judicial' functionary of 'prejudice' upon the matters submitted to him for judicial determination.

"It is high time that the public should interest itself in this particular aspect of administrative law, which now so intimately affects us all. There should be absolutely no place for 'zealots' in these agencies. The 'zealot' has his place, and an honorable place, in the community, but he must not be entrusted with *judicial* powers that touch the subject of his 'zealotry.' The most elementary principles of natural justice forbid it. How long are we going to tolerate violation of those principles?"

New Books . . .

How Collective Bargaining Works. 986 pages. 9¼ in. by 6¼ in. Bound in cloth. Published by The Twentieth Century Fund, 330 West 42nd Street, New York. Price $4.

This bulky volume constitutes a report on the current state of the relations between labor and management in major American industries, and a survey of the changes in these conditions that have accompanied the development of labor organizations in different fields. Prepared by 16 research specialists under the supervision of the labor committee of the endowed Twentieth Century Fund, of which William H. Davis, now chairman of the National War Labor Board, was chairman, these reports are, in general, reviews of the historical background of labor-management relations and outlines of the wage and hour bargaining practices that now prevail in selected industries. An analysis and interpretation of these reports is to appear later, as a basis for a "program of action"—to be developed and advocated by the committee. The present book is, therefore, relatively free from sweeping *a priori* conclusions and academic axe-grinding, and gives an informative and generally factual summary of the circumstances under which labor and management now deal with each other in several important fields of enterprise.

Separate chapters are devoted to the following industries: Daily newspapers, book and job printing, building construction, bituminous coal, anthracite, railroads, men's clothing, hosiery, steel, automobiles, rubber products, glass, and electrical products. Another chapter covers conditions in Chicago in three service trades—cleaners and dyers, motion picture operators, and musicians. A lengthy appendix outlines early steps toward collective bargaining on a nation-wide scale in several industries, and reviews briefly the present situation in a dozen or so industries not treated in the detailed studies that make up the body of the report.

The 62-page chapter on Railroads was prepared by Harry D. Wolf of the University of North Carolina. Some readers may feel that the author has viewed the results of certain union activities through rose-colored glasses, and that he has not put sufficient emphasis on the basic reason for the "record of almost complete freedom from strife for nearly a score of years" in the industry—that is, the extent to which management has deemed it expedient to yield to union demands, or, indeed, impossible to do otherwise.

However, they will not overlook other conclusions, less sympathetic to the official "labor" viewpoint, such as the assertion that the practice of the National Railroad Adjustment Board "which deprives an individual from having his complaint heard without first joining a union appears indefensible"; the remark that "the almost universal application of the seniority principle . . . distributes the burden of unemployment unequally"; and the comment that "the railroad labor organizations have made increasing use of their political power until now it is scarcely less important than their bargaining power." But the dominant emphasis of this article is on its recitation of historical events and outline of present practices, not on its author's conclusions.

Altogether it constitutes a compact and clear description of the development and operation of the machinery through which collective bargaining goes on in the railroad industry, and a significant analysis of the working of wage scales, "constructive allowances," seniority rules, rivalries between unions, and other conditions that affect company operations and individual earnings.

Comparisons between the survey of the railroad industry and of others that are examined as fully in this book will expose many parallels in the development of labor organizations and their growing power and effectiveness in forcing concessions from management, with the result that the conditions discussed in the chapter on railroads can be appraised in their proper relationship to the whole pattern of evolution of nation-wide bargaining methods and their practical results. A conclusion common to most of the articles is that present tendencies point to regional and national application of collective bargaining agreements, greater organization of employers, and eventual development of industry-wide bargaining machinery.

Realization of these objectives—already approached more closely in the railroad industry than in many others—Chairman Davis says will lead to "greater stability throughout an industry, more responsible unions, and put management on a more fair and equitable competitive basis so far as wage costs are concerned." The principal need now, he concludes, "is more organization among employer and management groups. Such organization would do much to promote an equality of bargaining power between management and labor." This statement appears to disclose the general attitude of the committee that sponsored this study and selected the research workers who prepared the several chapters.

Proceedings of the American Wood-Preservers' Association for 1942. 610 pages, 6 in. by 9 in. Illustrated. Bound in cloth. Published by the Association, 1427 Eye street, N. W., Washington, D. C. Price $6.

Forty-two papers and committee reports, together with the discussions that followed their presentation, are included in this volume of the proceedings of the thirty-eighth annual convention of the Association, which was held at Minneapolis, Minn., in January. While some of the reports and papers deal with technical matters that relate particularly to the wood-preserving industry, many of them are of direct interest to railway men. Among the latter are included reports on service records of marine piling, poles, posts, and ties; on specifications for the pressure treatment of lumber, piles, poles, posts and ties, of Douglas fir, gum, oak and southern pine; on an international termite exposure test; on treated wood for car lumber; on the painting of creosoted wood; and on fireproofing.

Among the papers of special interest to railway men are Sapwood Depth and Absorption Limits on Round Coast Douglas Fir, by J. D. McLean, senior engineer, Forest Products Laboratory; Corrosion Studies with Certain Fire-Retardent Chemicals, by Arthur Van Kleeck, associate chemist, Forest Products Laboratory; Service Rendered by Various Species of Tie Timber in the Northwest, by Bernard Blum, chief engineer, Northern Pacific; Use of Gum Ties on the Missouri Pacific, by W. J. Burton, assistant to chief engineer, Missouri Pacific; Kiln Drying Southern Pine Poles, by J. G. Segelken, Bell Telephone Laboratories; Northern Pacific Test Tracks at Plains, Mont., Thompson Falls, Missoula and Lolo, by C. N. Whitney, Northern Rocky Mountain Forest and Range Experiment Station; Progress Report on Timber and Timber-Preservation Exposure Tests, by Albert P. Richards, W. F. Clapp Laboratories; and A Study of Fireproofing Standards for Pressure-Treated Lumber, by L. K. Andrews, technical department, American Lumber & Treating Company. Other papers containing much valuable information with respect to decay, preservatives, treatments and the use of treated timber by the railways and in related fields are those on Preservatives, Priorities and Processes, by George M. Hunt, chief, division of wood preservation, Forest Products Laboratory; The Effect of a Mold, *Trichoderma Lignorum*, on Loblolly Pine Sapwood, by Mae Spradling Chidester, junior pathologist, division of forest pathology, Bureau of Plant Industry; Creosote Treatment of White Pine, by J. G. Harkom, chief, division of wood preservation, Forest Products Laboratory of Canada; Corrosion Resistance of Wood-Preserving Plant Metals, by V. F. Hriber, technical department, American Lumber & Treating Company; Report of Committee on Diversified Uses of Treated Wood; Greensalt—A New Preservative for Wood, by W. McMahon, C. M. Hill and F. C. Koch, Bell Telephone Laboratories; Greensalt Treatment of Poles, by G. Q. Lumsden and A. H. Hearn, Bell Telephone Laboratories; Development in Treating Western Red Cedar Poles, by J. P. Wentling, wood technologist, Consolidated Treating Company; and A Study of Several Products of Disco Type Low-Temperature Coal Tar as Wood Preservatives, by J. J. Reid, assistant professor of bacteriology, Pennsylvania State College.

In addition to the foregoing, the volume also includes a detailed report of the business sessions of the thirty-eighth convention; a list of all of the wood-preserving plants in the United States, Canada and Mexico; and the thirty-third consecutive annual report, for the year 1941, of the quantities of wood treated and preservatives used in the United States, prepared by R. K. Helphenstine, Jr., of the Forest Service, United States Department of Agriculture. A special feature of this volume is a Review of the Lumber, Crosstie and Wood-Preserving Industry in the United States—51 Year Period (1890-1940), by Grant B. Shipley, consultant, wood-preserving division, Koppers Company.

Railroads-in-War News

L.C.L. at 9½ Tons Per Car in July

Figure is a gain of 0.6 ton over June and 4.2 tons over last year

Class I roads established a new record during July in less-than-carload freight loadings by averaging 9.5 tons per car, the Office of Defense Transportation announced on September 18. The previous high mark, reached in May and again in June, was 8.9 tons per car. Loadings of merchandise freight by Class I roads for the year 1941 averaged only about 5.3 tons per car.

Reporting under the terms of General Order ODT No. 1 which, on July 1, established an eight-ton minimum for merchandise loadings, 115 of the major carriers showed an increase of 41,654,000 lb. of merchandise handled as compared with June, and at the same time used 22,700 less cars for this traffic, with a resultant increase in the average load per car from 17,835 lb. to 18.983 lb., the ODT pointed out. Both in May and June, nine of the Class I roads reported an average weight per car of 20,000 lb. or more, while in July, 24 Class I roads equaled this mark.

The short lines boosted the average merchandise weight per car from 14,469 lb. in June to 15,253 lb. in July. During July, 23 of these roads averaged 20,000 lb. or more per car as compared with 18 in June and 16 in May. The short lines had an increase of 789,000 lb. of merchandise during July over June and used 489 less cars for its movement.

The reporting freight forwarders showed a 2,000,000-lb. increase in merchandise handled as compared with June and a decline in the average weight per car from 37,153 lb. to 36,874 lb. Their average weight per car, however, was 400 lb. heavier during July than during May, it was noted.

Among the Class I leaders, the Pittsburgh and Lake Erie continued in first place, while the Georgia came up to fifth place for its second appearance among the leaders. Few changes in the standings took place during July among the short lines. The Milstead continued to lead the list with an average load of 19¼ tons per car, and the Jay Street Connecting, Brooklyn, N. Y., and the Dansville & Mount Morris made their first appearance with the leaders.

Coming Scrap Meetings

B. C. Bertram, Director of Railway Salvage of the War Production Board, delivered an address on the railway scrap situation before the Pittsburgh Railway Club on September 24, and will address the annual meeting of the American Short Line Railroad Association in the Atlanta Biltmore Hotel, Atlanta, Ga., at 11:30 a. m. on October 8; the American Railway Magazine Editors' Association in the Kentucky Hotel, Louisville, Ky., at 2:00 p. m. on October 15; and the Pacific Railway Club in the Palace Hotel, San Francisco, Calif., Thursday evening, November 12.

Army Freight Yard Named for Railroad Man

The Army freight yard at North Point, in San Francisco, Calif., has been officially named Kirkland Yard in memory of William B. Kirkland, general superintendent of transportation of the Southern Pacific, whose death after 40 years in railroad service was reported in *Railway Age* of September 12, page 432. Although Mr. Kirkland served as a captain in the Army Engineer Corps in World War I, this tribute was a recognition not of military service but of the contribution made by him, as a typical railroad man, to the solution of transportation problems arising from current military requirements, according to the Army announcement.

Rubber Czar Gets More Power

Further clarifying the powers of the new rubber administrator, William M. Jeffers, President Roosevelt has issued an executive order directing all agencies having anything to do with the rubber program, including the Office of Defense Transportation, to carry out any directives which Mr. Jeffers may see fit to issue.

Henderson Protests Southern Fare Increase

A petition asking the Interstate Commerce Commission to suspend the proposed increase of from 1.65 cents a mile to 2.2 cents a mile in passenger coach fares throughout the South has been filed by Price Administrator Leon Henderson through OPA's recently-organized transportation and public utilities division. Under a recent authorization by the commission tariffs are published to become effective October 1.

The application asserted that the burden of the higher fare would be borne largely by war workers, commercial travelers, army camp visitors and others now dependent on railroad travel because of gasoline and tire rationing. It asked the commission to order a hearing requiring the Southern railroads to justify the increase.

Railways Must Have Peacetime Support

They need it to be ready for their vital wartime role, says Lea

A form of transportation as essential in wartime as the railroads "must have maintenance and support in peacetime to qualify it for whatever may develop," Congressman Clarence F. Lea, chairman of the House committee on interstate and foreign commerce, declared on September 24 during a round-table radio discussion in Washington, D. C. This, Congressman Lea maintained, can be accomplished "partly by regulation, the sort of regulation that will establish a just basis of competition."

The House committee on interstate and foreign commerce, Congressman Lea said, has been working for more than 10 years to achieve "a policy that looks toward the ultimate good of the country from the transportation standpoint rather than to the advancement of any particular type of carrier. The policy," he went on, "would measure the true value of the carrier to the country not alone by the convenience of the immediate present. The establishment of such a policy would necessarily place restrictions upon the competitive field of the regulated carriers, but would attempt to do that on a basis of economic justification and not on terms of favoritism or mere expediency."

In spite of several years of depression and diversion of traffic from the railroads to other means of transportation, the Congressman continued, "the war found our railroads ready to do the big job expected of them. And," he added, "they are doing it magnificently."

The war, according to Ernest E. Norris, president of the Southern, is having an effect on the railroads that "guarantees the future of the industry." For one thing, Mr. Norris said, "we are learning to do things that we never dreamed were possible. And the urgent necessity for getting more use out of our plant—out of our cars and locomotives, for instance—is stimulating the inventiveness, the ingenuity, the resourcefulness of everyone connected with the railroad business. That is good for us, for the future of our industry, and for the nation." Another effect of the war on the railroads, Mr. Norris stated, is public realization that the railroads are "indispensable in wartime" and that they "are always prepared for any emergency, whether that emergency be war or flood or drought."

"The railroads will come out of the war with the respect and confidence of a grate-

ful people," he went on. "They will have the most efficient plant they have ever had. They will have the best trained personnel in railroad history. They will have the most effective techniques ever devised for the transport service of a nation. They will have perfected machinery for co-operation between those who operate and those who use the railroads. And they will have a record of achievement that will make a shining page in history."

On the other hand, Mr. Norris pointed out, traffic will drop sharply, and the railroads "must face keen competition in the air, on the water, over the highway and under the ground—competition made possible largely by the very facilities of war that we are now helping to create."

"When the war ends," he explained, "there will be thousands of bombers and air transports that can be converted to carry passengers, freight, express and mail. There will probably be thousands of ships that we didn't have before the war. Inland waterways will have been improved and service on them greatly expanded. Pipe lines, put down as war necessities, will pump along merrily. The result is only too obvious. We will have more transportation facilities than we need, with all of the carriers in a battle royal for a share of the country's hauling job."

Although Mr. Norris said that he foresees difficult days ahead, he expressed confidence that "the railroads have got what it takes to lick the problems of tomorrow, and the problems of all the tomorrows to come."

The problem immediately ahead, John J. Pelley, president of the Association of American Railroads, declared, is to move the increasing traffic of 1942 and 1943. To do this, he said, the railroads are getting more use out of each car and each locomotive than they ever did before.

"Ever since the war began in Europe," Mr. Pelley stated, "the railroads have been increasing their stock of serviceable locomotives and cars to keep up with traffic which, in three years, has just about doubled. To carry much more, they will have to have more equipment. Of course, that means materials, and materials are scarce. We don't know just what is available or just what the nation's other war needs are, but I am hopeful that the men in the Government who have the heavy responsibility of allotting materials for the best purpose will find it possible to let the railroads have what they must have to keep vital shipments moving."

In accomplishing this, Mr. Pelley said, the co-operation of the Government and the other shippers is very important. "It takes teamwork to produce transportation," he concluded, "and the Government and the shippers and the receivers of freight are all just as much a part of the team as are the railroads. It takes all members of this four-way transportation team, working together, to keep things moving—and I am glad to be able to say that this is what is happening today."

New Coal Route to New England

Acting in response to a request from Director Eastman of the Office of Defense Transportation, railroads have opened new routes for the handling of West Virginia and eastern Kentucky coal to New England through Columbus, Ohio, or Marion, and thence eastward. The new routes are expected to relieve the pressure on such gateways as Hagerstown, Md., and Potomac Yards, Va.

The plan involved rate revisions, which the ODT announcement said will generally equalize the rates over the new routes with those in effect over the lowest rated existing routes. The rates became effective September 25 on short notice authorized by the Interstate Commerce Commission.

ODT Appointment

C. D. Hutchins of Columbus, Ohio, has been appointed chief of a newly-created School Bus Section in the Office of Defense Transportation's Division of Local Transport. Since 1929, he has been auditor for the Ohio State Department of Education, "specializing in pupil transportation in Ohio, where the school bus system is the largest of any state."

ODT Coordinates More Bus Services

An order directing coordinated bus service between Harrisburg, Pa., and New York City has been issued by Director Eastman of the Office of Defense Transportation. The six companies affected are Alma Lines, Inc., Edwards Motor Transit Co., Frank Martz Coach Co., Jersey Central Transportation Co., Pennsylvania Greyhound Lines, Inc., and Reading Transportation Co.

Scrap Situation Bright for U. S. Steel

As far as the United States Steel Corporation is concerned, the scrap situation is good and no production will be lost by the corporation as the result of a scrap shortage this year and next, according to Irving S. Olds, chairman of the board at a press conference following a meeting of the board at Chicago on September 23. This board meeting was the first in the history of the corporation to be held outside of New York and, if circumstances permit, will be followed by others at important steel-producing centers.

In discussing the scrap situation, both Mr. Olds and Benjamin F. Fairless, president, emphasized the fact that, with adequate blast furnace capacity for the handling of ore, scrap was not an over-important factor in the corporation's iron and steel output. They paid tribute to War Materials, Inc., which has been formed by the government to subsidize the collection of scrap, for its successful campaign in loosening up the country's scrap reserve. Both men were of the opinion that although automobile "graveyard" scrap is important in the production of war materials, the big job confronting War Materials is the collection of iron and steel from the many obsolete and unused bridges and other structures throughout the United States. With the awakening of the public to the need for scrap, War Materials will bring in large amounts of scrap, they prophesied. Experiments in the manufacture of sponge iron, they stated, are being conducted by the corporations but its manufacture on a large scale in the United States, as in Germany, is prohibited economically because of an abundance of raw materials.

Eastman Speaks to Truck and Bus Operators

Speaking over the facilities of the Columbia Broadcasting System on September 19, Joseph B. Eastman, director of defense transportation, warned the truck, bus, and taxicab operators that after November 15 they will not be permitted to operate their vehicles without a Certificate of War Necessity. Details of General Order ODT No. 21, requiring the certificate and taking control of the country's 4,890,000 non-military trucks and 154,000 buses, as well as taxicabs and other commercial vehicles, were given in the *Railway Age* of September 12, page 417.

"If any operator wilfully violates the limitations of the certificate or the provisions of any other order of my office," Mr. Eastman told the radio audience, "his certificate will be subject to suspension and in flagrant cases it will be revoked. However, neither I nor any of my staff will intentionally act in any arbitrary or ruthless way in carrying out this order. We realize that in the last analysis its success will depend upon the patriotism of the operators themselves."

Boston & Maine Employees Make Bond Subscription Record

Labor-management co-operation contributed to enrolling 98.8 per cent of the Boston & Maine's regular personnel under the payroll deduction plan for the purchase of war bonds, a record that brought a congratulatory telegram this week from Secretary of the Treasury Morgenthau, in which he said, "Yours is the first railroad of more than 300 employees to make this outstanding contribution to the war effort." The total of signed authorizations reported up to September 16 amounted to a monthly war bond subscription of $255,330.02, a figure in excess of 10 per cent of the road's average monthly payroll during the first half of 1942.

The organization that produced this record in less than eight weeks made a personal solicitation of every employee, the Boston & Maine reports. Each of the local and division committees included representatives of the employees and of the management, and on the general committee of eight there were four officers of the railroad and four general chairmen of railroad labor organizations.

Transportation Corps Sending Out Traffic Specialists

The Transportation Corps of the Army's Services of Supply is assigning traffic specialists to 50 areas throughout the country "to assist in maintaining the smooth flow of military troops and supplies without dislocation of essential civilian traffic," according to a recent War Department announcement.

These traffic control experts, "drawn from the experienced personnel of industry

and railroads," will co-ordinate transportation facilities in the field to prevent congestions and bottlenecks that might delay the movement of troops and military freight.

The men selected for the assignments have just completed a one-week "refresher" course, conducted by the Traffic Control Division, Transportation Corps. The course emphasized the necessity of utilizing all forms of transportation facilities to the utmost to assure efficient operations.

The traffic specialists, all of whom are commissioned officers, will go on duty as traveling transportation officers in localities extending from Maine to California. Their duties will include general traffic management in their respective jurisdictions and cooperation with military personnel charged with troop and supply movements.

East Coast Oil Shipments Set New Record

Tank car shipments of oil to the east coast exceeded all previous records with an average of 838,440 barrels daily for the week ending September 12, according to an announcement on September 17, by Petroleum Co-ordinator for War Harold L. Ickes. This was an increase of 13,590 barrels daily over the volume moved in the previous week, when car loadings averaged 824,850 barrels. The former record was 830,820 barrels daily, established in the week ending August 15.

In handling the movement the 33 oil companies loaded 27,948 cars. On a basis of an average of 210 barrels per car, these cars carried the equivalent of 5,869,080 barrels of petroleum and petroleum products during the week.

Meanwhile, carrying out President Roosevelt's request of last week, Representative Sikes, Democrat of Florida, has introduced in the House H.R.7564, which would appropriate $6,485,000 for improving the Gulf Intracoastal Waterway from Corpus Christi, Tex., to Apalachee Bay, Fla. Authority to do this work was contained in the Florida pipe line bill which became law on July 23, 1942.

Eastman Asks Police Support

The country is faced with a street and highway traffic situation that is capable of causing serious difficulties in the prosecution of the war effort, ODT Director Joseph B. Eastman told the International Association of Chiefs of Police, meeting at the Pennsylvania Hotel, New York, on September 22. Washington cannot enforce the drastic rules and restrictions required to meet the emergency, particularly the rubber shortage, and ought not to be expected to do so, he stated, calling on the police organizations of the states and cities to undertake this responsibility.

Among important regulations mentioned the 35 m. p. h. speed limit was emphasized, and Mr. Eastman stressed the necessity of applying this restriction to all rubber-borne vehicles, specifically including trucks, buses, cars of war workers and of military personnel not on official business—classes reported to have shown a tendency to indifference to traffic restrictions—and police cars, particularly when escorting "distinguished visitors." Efficient traffic control is vitally necessary, he said, both to obtain maximum use from existing highway equipment, which must not be held up by traffic jams, and to protect the public safety, more important than ever when the full man power of the nation is required for the war effort.

Tributes to Travelers

These selected pages from a booklet prepared by the New York Central for distribution on its trains and at ticket offices show that this road considers acknowledgments to be merited by customers who have been reading, and being guided by, its series of advertisements on railroad service problems under wartime conditions.

TO MR. PEEK
for planning his travel in the middle of the week!
The cooperation of passengers in scheduling their trips to avoid weekend congestion whenever possible has been most gratifying. These mid-week travelers obtain a better choice of accommodations and leave weekend space for men on furlough.
TUES.
TO MRS. WHITE
for traveling light!
Nowadays, with both Pullmans and coaches at near capacity, a minimum of luggage leaves more space in accommodations and facilitates transfers. We are grateful that so many passengers are adopting the motto "traveling light is traveling right!"

British Accident Statistics Show Wartime Effects

The 1941 British railway train accident statistics, reviewed in a recent issue of the Railway Gazette (London), reveal an increase in the number of accidents and its fatalities, as compared with 1940 and recent preceding years, in spite of the fact that there was a slight decrease in total train-mileage. The official report by the Chief Inspecting Officer of Railways ascribes the unfavorable showing in part to heavier loading of trains, longer individual journeys, and an increase of about five per cent in the number of passengers carried. Blackout restrictions, fatigue and inexperience of employees, rerouting of traffic over secondary routes, and other conditions resulting directly from abnormal wartime influences, all contributed to the upward trend of the accident figures. Another unusual factor that affected the train accident data was the fall of an airplane on the Blackpool station, which caused fatalities, fire, and a serious traffic delay.

The British statistics for 1941 are not directly comparable with pre-war years, or with American figures, because only those accidents that involved personal injuries or serious property damage were analyzed in the official report. Altogether 344 such accidents occurred in 1941, as compared with 276 in 1940, when the same method of compilation was used. This increase of over 24 per cent in the number of accidents was accompanied by an increase of over 50 per cent in the number of fatalities—76 as compared with 50 in 1940. In the United States there were 295 fatalities due to train accidents in 1941 and 342 in 1940, a decrease of about 14 per cent.

On the other hand, while the percentage of accidents due to human failure increased in the United States in 1941, when it was 44.3 per cent of all train accidents, as compared with 36.9 per cent in 1940, the British report shows a definite decrease in this respect, attributing 45.6 per cent of their reported 1941 accidents to human failure as compared with 58.3 per cent of the 1940 total. Accidents due to equipment failures accounted for 18.6 per cent of the British 1941 total, and for 21.3 per cent of their 1940 total, while the corresponding United States figures were 26.4 per cent in 1941 and 33.0 in 1940. The percentage comparisons for British operations are rendered somewhat less significant, however, by the fact that in 1941 there were 54 train accidents caused by snow, landslides, and other conditions resulting from unusual weather, as compared with five such accidents in the more normal year 1940.

Week-End Travel Still Too Heavy, Says ODT

"Too many people continue to travel on week ends by bus and train," said a September 21 press release from the Office of Defense Transportation. The release attributed the foregoing assertion to "Office of Defense Transportation officials" who were also reported to have pointed out that "although some progress has been made in the drive to shift weekly passenger travel to the middle of the week, congestion on rail and bus lines over the week end is still growing."

The statement went on to say that "a further shift of at least eight per cent is necessary to eliminate the peak week-end load on rail and bus lines." It called attention to the fact that 51 per cent of total ticket sales of the week are recorded on Friday, Saturday, and Sunday, with the heaviest selling done on Saturday when an average of 21 per cent of the week's sales take place. Sunday is second with 16 per cent. The ODT officials said that a more even distribution would require that 57 per cent of the sales should come during the Monday-Thursday period, thus leaving 43 per cent for the week end.

"A review of summer passenger travel," the statement said, "disclosed that progress made thus far toward keeping down week-end travel has been due mainly to the cooperation of government agencies and private business organizations, particularly insurance companies and banks."

Roads Top Relay Rail Goal

A total of 59,935,039 lin. ft., or roughly 6,000 track-miles, of relaying rail were released by the railroads of the United States for the use of the war agencies during the period from April 22, this year, to September 19, according to the Railroad Salvage Section of the Conservation Division of the War Production Board. This rail, together with the track fastenings fur-

nished, totaled approximately 1,050,000 net tons. Of the total, 26,367,079 lin. ft. were allocated to the Army, 11,585,537 ft. to the Navy, 3,406,308 ft. to the Maritime Commission and 18,576,121 ft. to the defense plants and industries and other uses.

April 22 was the date when Limitation Order P-88, issued by WPB, became effective, requiring railroads to release old rail in return for new rail, placing all shipments under the direction of WPB and requiring the preparation of rail reports. Previous to that time, the railroads had released approximately 20,000,000 lin. ft., or roughly 2,000 track miles, of relaying rail, which brought the total amount of relaying rail released by September 19, to approximately 80,000,000 lin. ft., or 8,000 track miles. The railroads actually released in two and a half months, since July 1, all but 1,000,000 ft. of the 40,000,000 lin. ft. which they were told at that time would be required from them during the next six months. Since July, however, additional requirements for relay rail have developed, amounting in the aggregate to approximately 23,000,000 lin. ft., or roughly 2,300 track miles, by September 19.

Materials and Prices

Following is a digest of orders and notices of interest to railroads issued by the War Production Board and the Office of Price Administration since September 11.

Blackout equipment—Order L-168, effective September 18, prohibits the manufacture or sale of blackout and dimout lighting fixtures which do not conform to specifications of the War Department, Navy and the Maritime Commission, and lays down conditions under which approved fixtures—street and highway lights, traffic signals, flashlights, lanterns and other equipment intended for use in blackouts and dimouts—may be sold. The War Department has issued specifications governing building, street and highway lighting during blackouts, and is preparing specifications for coastal lighting and for blackout accessories for flashlights, lanterns, traffic signals and other related lighting equipment. Military specifications require a certain standard of optical and mechanical performance, but do not regulate the material content of the fixture. This control is established by the limitation order.

Electric bulbs—Order L-28-a, issued September 18, ordered that types of bulbs now made be reduced from 3,500 to 1,700. The cut will be accomplished through elimination of almost 2,000 lamps of varying voltage, wattage, color and other construction specifications. There will be no curtailment in the total production of electric bulbs as a result of the order, and it is expected that adequate supplies of the permitted types will be produced to compensate for those which will no longer be made. The common household electric light bulb previously made in voltages of 110, 115, 120, 125 and 130 will now be made only in the 115, 120 and 125 volt types. Likewise, 50 watt and 75 watt lamps will no longer be made. Only bulbs in red, blue and green will be allowed, as compared to the large number of color variations used previously. After November 1, no part may be made which cannot be used in lamps conforming to the specifications listed in the schedule. The order prohibits, after November, etching, coating or making of bulbs for such private accounts as railroads, or for other resale purposes.

Lift trucks—An appeal to owners of used lift and other power trucks to take an immediate inventory and report the results to WPB was made September 12 by the chief of the General Industrial Equipment Branch.

Second hand equipment—Limitation Order L-196, which became effective August 31, it was emphasized in a notice issued September 17, requires any person owning used construction equipment listed in the order to fill out WPB Form 1159 within 30 days after August 31 and return it to the Used Construction Equipment Specialist in the WPB regional office in the region in which the equipment is located. In addition, the order requires that within one week after any used construction equipment is moved from the project on which it is being used, becomes idle, changes ownership or undergoes any other change in status, the owner must report the change on WPB Form 1333 to the proper regional office.

Shipping drums—Limitation Order L-197, issued September 14, prohibits the use of new or second hand steel shipping drums for packing approximately 200 food, chemical and petroleum products after 60 days from the date of the order. The order also prohibits the packing of any product in an additional list of approximately 35 items in a new or used drum manufactured, purchased or delivered after September 15. Most products barred from the use of steel drums are expected to be shifted to barrels and, in some cases, to fibre containers and glass containers. Among the products which may not be packed in steel drums after the 60-day period are paints, shellac and crude oil. Among products which cannot be packed in steel drums after September 15, if the drums are not now owned by the packer, are asphalt and turpentine. Drums made or sold after September 15 must be plainly marked on the bottom plate with a letter X.

Prices

Cement—Maximum Price Regulation No. 224, issued September 18, establishes a specific price regulation for sales of cement by manufacturers, and removes producers' sales from the provisions of the General Maximum Price Regulation and Maximum Price Regulation No. 188. Sales by dealers remain, with few exceptions, under the General Maximum Price Regulation. The regulation establishes maximum prices for sales by manufacturers within their normal market areas and for those made outside the areas they normally serve, the deficiency areas. The regulation eliminates price discrepancies by providing that the producer's maximum price for types 1 and 2 Portland cement, whether made on the basis of f.o.b. mill or delivered, is the price the producer charged, or would have charged, the individual purchaser between March 1 and March 15, 1942, plus any increase in freight rates since March 17, 1942, for shipments to the purchaser's destination. In arriving at maximum prices for the other grades and types of cement, the regulation provides that the producer add or deduct from the maximum prices established for the two basic Portland cements the average differential which prevailed on March 15 for white cement, oil well cement, masonry cement, etc. Dealers may add to their maximum prices, as established by the General Maximum Price Regulation, an amount not in excess of the increase in the producer's delivered price. The regulation establishes specific dollars-and-cents maximum prices, on an f.o.b. mill basis, for cement shipped out of the territory not normally served by the producer.

Idle materials—Amendment No. 1 to Regulation No. 204 (idle or frozen materials sold under Priorities Regulation No. 13), effective September 16, provides that idle and frozen material which is in the form originally purchased may be sold at prices computed f.o.b. present location. The new procedure cuts across all OPA regulations which establish dollars-and-cents maximum prices for sales by any person. Items which may be sold under the new pricing procedure of Maximum Price Regulation No. 204 include all material which is sold pursuant to WPB's Priorities Regulation No. 13.

Lumber—A modification of Maximum Price Regulation No. 26 (Douglas fir and other West Coast lumber), issued September 15, prescribes methods for establishing maximum prices for lumber items not specifically priced by the regulation. Under the original provisions of the regulation, which applies only to shipments which originate at the mill, the seller established a maximum price for a product not specifically listed by basing the price on the dollars-and-cents ceiling set for the most nearly comparable item. As adjusted, the amendment provides that the seller base his maximum price for an unlisted item on the basis of two common and frequently sold types of lumber which are specifically priced. September 19 has been set as the effective date of the amendment.

Maximum Price Regulation No. 219 (Northeastern softwood lumber), issued September 15, placed shipments of Northeastern white pine which originate at the mill under specific maximum prices. As soon as practicable, specific prices will be established for the secondary species of this group, including Northeastern Norway pine, red spruce, black spruce, white spruce and hemlock. Pending this action, prices for this lumber remain under the General Maximum Price Regulation. The new measure, which applies to white pine produced in the States of Maine, New Hampshire, Vermont, Connecticut, Rhode Island and Massachusetts, establishes prices for square edge white pine lumber at approximately the same level set by the General Maximum Price Regulation, while ceilings for round edge lumber are adjusted to reflect increases in cost of production. The price schedule will become effective September 19.

Amendment No. 1 to Maximum Price Regulation No. 13 (Douglas fir plywood), issued September 16, adjusts the established dollars-and-cents maximum prices for three of the lower grades of plywood—plyscord, plywall wallboard and sound-one-side plypanel—in order to bring prices into a proper relationship with upper grades. The amendment is effective September 21. In addition, the adjustments reflect substantial increases in the cost of production of plywood since May, 1941, which is the level of the maximum prices established by the original Revised Price Schedule No. 13. The amendment increases the maximum price for 5/16 by 3 ply, rough plyscord $1.70 mbf. to $27, f.o.b. mill, for straight carload shipments. Prices for the three other thicknesses for which specific prices are established are increased by the same amount. Wallboard is increased $2 mbf. to $30 for 5/16 by 3 ply S2S to ¼ in., f.o.b. mill, straight carload, with prices for all other thicknesses also increased a like amount.

Paper—Supplementary Order No. 19, effective September 24, automatically licenses all distributors of paper and paper products for which ceiling prices are established. The order includes makers of kraft wrapping and bag papers.

Rubber tires—Amendments of September 16 to controls over rubber tire prices requires that maximum charges for use of tires or tubes—new, used, retreaded and recapped—on bus mileage contracts or other rental or lease arrangements must be determined under Maximum Price Regulation No. 165 which puts the ceiling price of services generally at the March, 1942, level. All the amendments become effective September 22.

Service charges—Manual No. 2, explaining how the service trades price regulation (Regulation No. 165 as amended) and applying to the more than 600,000 service establishments throughout the country, was issued September 17. The 61 classes of service businesses regulated embrace maintenance, rental and repair services. Commission selling, custom processing of many commodities and transportation brokerage are covered. The manual explains how to arrive at maximum prices under the service trades price regulation and various other requirements, which service establishments must meet.

Steel castings—Revised Price Schedule No. 41 was changed September 18 to make it clear that it covers both rough and machine castings.

Standards—Creation of a Standard Division of OPA was announced September 6 to develop specific standards for inclusion in all regulations where quality of product is a factor. These standards, which must be met if the commodity or product is to command the applicable maximum price, will include definitions of quality and may require goods to be identified and labeled accordingly. The new division will also develop the standard for rationed commodities so that consumers will obtain fair quality as well as quantity when buying rationed goods.

Wire cable—Amendment No. 2 to Revised Price Schedule No. 82 (wire, cable and cable accessories), issued September 3, broadens the scope of Price Schedule No. 82 to cover wholesalers as well as manufacturers of wire, cable and cable accessories, rather than Maximum Price Regulation No. 136. If this amendment were not issued, manufacturers would be permitted to base their prices on October 15, 1941, but wholesalers would be forced to base their prices on October 1, 1941. As many manufacturers had increased their prices in the interval between October 1 and October 15, 1941, and as Schedule No. 82 permits an adjustment of October 15 prices for increases in the price of lead and for solid copper weatherproof wire, the retention of an October 1, 1941, base date for wholesalers would work an obvious injustice.

GENERAL NEWS

Denies Complaint of NKP Stockholder

Nickel Plate says action was not filed in good faith and has no basis in law or fact

The New York, Chicago & St. Louis has asked the Interstate Commerce Commission to deny consideration to a series of four complaints filed recently by Thomas L. Little, a stockholder, charging that the road has been unjustly deprived of a considerable amount of revenue due to allegedly unlawful divisions which it has entered into with various railroads in the eastern and southern part of the United States, details of which were set out in the *Railway Age* of August 29, page 351, and September 12, page 424.

The railroad's answer said that on November 16, 1939, the complainant, after having served for several years as a head clerk in its accounting department in Cleveland, Ohio, was demoted to a subordinate clerical position "because his work had proved unsatisfactory" and that he did not report to the new position, "but instead, he made several requests during the latter part of 1939 and early 1940 that his absence be excused on the ground that he had an injured foot, or was ill, or was suffering from a nervous disorder."

The carrier went on to declare that in that period the Nickel Plate's assistant chief surgeon, Dr. J. Frank Dinnen, examined the complainant and advised the railroad's accounting officers that he was in no condition to work, and that after two examinations in May and June, 1940, Dr. Dinnen advised him that he "should consult with and be examined by a psychiatrist."

The railroad's answer also pointed out that the complainant had harassed the company for the past three years and that it was at a loss to know the reason for such action. It told the commission that Mr. Little had filed and threatened to file other civil suits in the courts in Ohio in an attempt to force the company to file actions against other railroads to recover alleged shortages in divisions payments.

The carrier admitted that the complainant had repeatedly demanded access to the company's books and that it had refused such access on the grounds that the requests were not made in good faith and would violate the law by permitting him to see the record of traffic and business of the Nickel Plate's shippers.

The company's answer informed the commission that the complainant became the owner of record of five shares of the Nickel Plate's common stock on April 26, 1940. "As to the complainant's allegation that as a stockholder he has been injured by the actions of this defendant," commented the answering brief, "the said complainant . . . under rule 23(b) of the federal rules of civil procedure . . . may not claim to have been injured as a result of transactions which occurred prior to his acquisition of defendant's stock."

The Nickel Plate denied specifically each of the complainant's allegations regarding the unlawful divisions and told the commission that it had no objection to the commission instituting an investigation if it should see fit, but the carrier feels that it should not be forced to recheck the thousands of waybills in order to prove the lack of validity of the complainant's charges.

Budd Advises on Post-War Transport Policy

A transportation policy which will give private enterprise a free hand to create a unified transportation system after the war was urged by Ralph Budd, president of the Chicago, Burlington & Quincy, before a regional meeting of the National Resources Planning Board at Chicago on September 17. He said that "over-all systems," combining railroads, truck and bus lines, waterways, and other facilities into highly efficient enterprises that would permit each type of transport to do the work for which it is best fitted, would result if individual initiative were encouraged.

The postwar program, he continued, ought to be approached as a problem divided into two parts—one involving government policy and the other involving the projects themselves. More efficiency and economy could be assured by treating all types of transportation as parts of a unified system than by attempting to solve the problems of the railroads, the truck and bus lines, and other systems separately, Mr. Budd said.

I.C.C. Practitioner Applications

Applications for admission to practice before the Interstate Commerce Commission, which have been returned to applicants for corrections or supplemental information, have been dismissed by the commission "without prejudice" in cases where the corrected application has not been resubmitted within 45 days. This action came in an order issued last week by Division 1, the order stating that, although advised by the commission, applicants have been failing to correct their applications.

Shippers' Meetings Discuss Car Supply

New England and Southeast Advisory Boards praised for full co-operation

Speakers before regional Shippers Advisory Board meetings in New England and the South last week continued to express admiration for the efficiency with which shippers and receivers of freight have co-operated to keep railway equipment on the move, but warnings were sounded of possible tight situations ahead.

Homer C. King, director of the Bureau of Service of the Interstate Commerce Commission, was the luncheon speaker at the meeting in Atlanta of the Southeast Shippers Advisory Board on September 17. He particularly emphasized the contribution toward exceptional performance records made by the joint efforts of railroad men and shippers' car efficiency committees, and compared this situation with some of the results of management through government agencies which he found less deserving of praise.

The danger that a shortage of open top cars may develop during the next three months was stressed by Warren C. Kendall, chairman of the car service division of the Association of American Railroads, speaking at the same gathering. Reports of committees and discussions from the floor indicated a general feeling that the freight car supply so far has been under control in the southeastern states, and that only temporary local difficulties have come up in handling all traffic movements satisfactorily under wartime conditions.

Much attention was given the fuel supply problem by the New England Shippers Advisory Board meeting in Boston September 15. Among the speakers were Commissioner J. Monroe Johnson of the Interstate Commerce Commission and V. V. Boatner, director of the railway transportation division of the ODT. Excerpts from Mr. Boatner's remarks were published in *Railway Age* September 19, page 458. Colonel Johnson spoke of the spontaneous and voluntary response of transportation men and shippers to wartime needs, which had made it unnecessary to put into effect various restrictions on the free flow of ordinary traffic that the Commission had feared might be required to keep military supplies and troops moving without delay. "Railroad transportation is a vital link in the chain that is pulling us to victory," he said. "If that fails, all fails."

J. C. Richdale, chairman of the New England States Liquid Fuel Administration, outlined the progress already made

News Department continued on next left-hand page

Photo Courtesy Southern Pacific Company

it takes POWER to shrink miles!

It takes *power*, and plenty of it, to so shrink the miles with a heavy freight that more of them can be packed into each hour of running time.

Fleets of Lima-built Modern Super-Power Steam Locomotives are now shrinking the miles on the country's railroads. For the roads had the vision to see clearly the great importance of acquiring new and better locomotives — locomotives expressly designed and built to handle heavier loads at greater speeds. Now, thanks to their foresight and courage, the roads are playing a most successful part in speeding onward the greatest volume of freight our railroads have ever been called upon to move.

LIMA LOCOMOTIVE WORKS LIMA LOCOMOTIVE WORKS INCORPORATED **INCORPORATED, LIMA, OHIO**

in converting the region's oil distribution system, geared to dependence on tankers, to perform efficiently in handling trainload shipments of petroleum products. Pipelines, he said, could only be of indirect assistance to New England, and that section's health and comfort in the coming winter depend on getting more tank cars and on making larger supplies of oil, particularly of domestic heating oil, available at the closest possible supply points, particularly in the Central States. At present New England is receiving less than 50 per cent of normal oil requirements, he declared.

To illustrate the extraordinary measures to which it has been necessary to resort, Mr. Richdale described the movement of one oil shipment from Texas to Rhode Island. It was handled by barge through the Gulf of Mexico and up the Mississippi to Baton Rouge, La., then by pipeline to Greensboro, N. C., where it was loaded into tank cars and shipped to Norfolk, Va. There it was transferred to barges, on which it moved to Philadelphia, Pa. A pipeline carried it then to Newark, N. J., and barges again moved it from that point to Providence, R. I., whence it was distributed by truck and local hauling services.

The coal supply situation in New England was outlined by R. L. Bowditch, chairman of the New England States Solid Fuel Administration, and in general conditions are satisfactory, he said, though the future is somewhat clouded by several undetermined factors, such as the capacity of rail gateways through which coal from southern West Virginia must now come to New England, the possibility that the collier vessels still in coastal service may be diverted elsewhere, and the added demand for coal that may result from accelerated industrial activity and conversion of oil burning furnaces. The restricted dumping capacity of New York harbor piers, the limited yard storage space there, and the effect of cold weather on the rate of unloading all will slow the movement of southern coal by barge into New England from that point, he remarked.

Louis M. Ross, district manager of the car service division of the Association of American Railroads, reported on the equipment situation in New England, and pointed out that the only actual or threatened car shortage in that territory is a tight situation in the paper car supply on the Bangor & Aroostook. In complying with ODT General Order No. 1, he said, the New England railroads have "saved" several thousand cars per month, the number running around 6,000 on the Boston & Maine, 2,000 on the Delaware & Hudson, and 1,300 on the Maine Central, for example. To suggest how shipper cooperation is helping to keep the car supply fluid, he mentioned the record to date this year of the Bangor & Aroostook, where over 94 per cent of all cars loaded and unloaded were released during the 48 hour free time.

Study Board Appointment

James H. Goff, professor of transportation at Alabama Polytechnic Institute, Auburn, Ala., has been appointed director of economic studies of the Board of Investigation and Research created by the Transportation Act of 1940. The announcement said that in addition to his teaching experience Mr. Goff has served as an economist in research work for the United States Army Engineers; and as chief of the Transportation and Industrial Economics Division of the Tennessee Valley Authority.

Western Lines Choose Labor Director

Daniel P. Loomis, assistant general counsel of the Delaware & Hudson, with headquarters at New York, has been appointed executive director of the Association of Western Railways, with headquarters at Chicago, and will have jurisdiction over labor matters in the territory west of Chicago and the Mississippi river. The appointment of Mr. Loomis is a step by the Western lines to establish a permanent organization which will handle the labor matters of the Western lines and at the same time keep abreast of current labor trends and economics.

The Unions Will Accept Board's Short-Line Wage Findings

Leaders of the railway labor organizations have advised President Roosevelt that they will accept the recommendations of the Emergency Board which reported last week on the dispute involving carriers which had not brought the wages of their non-operating employees into line with the settlement of the general wage case last December. As noted in last week's issue, the Board recommended paid vacations and wage increases of 10 cents an hour over May 31, 1941, basis together with provisions for hourly minimums of 43 cents on short lines and 46 cents on the few Class I roads and car lines involved.

Acceptance by the labor organizations had been anticipated, since the Board's recommendations met virtually all of their demands. The only exceptions were the failure of the Board to find in favor a 46-cent minimum wage for all roads, and its action making the increases retroactive to December 1, 1941, instead of September 1, 1941. As noted also in last week's issue, the carriers are expected to accept the recommendations insofar as their respective financial situations permit.

Club Meeting

The speaker at the regular monthly meeting of the Toronto Railway Club, to be held at 7.45 p. m. September 28 at the Royal York Hotel, Toronto, Ont., will be C. B. Cooper, manager—tire sales of the Goodyear Tire & Rubber Co. of Canada, whose subject is Rubber.

Non-Ops Ponder Wages

The relation of the wages of non-operating employees to those of employees in other industries and to the cost of living index formula used by the National War Labor Board in fixing wages in the "little steel" labor dispute were considered by the general chairmen of the 14 non-operating brotherhoods at a meeting at Chicago on September 18 and 19.

The sessions were concluded without deciding to issue any statement on the possibility of making new wage demands and, according to B. M. Jewell, president of the Railway Employees Department of the American Federation of Labor, no comment was forthcoming other than an indication that the meeting had given thought to the President's anti-inflation program. The agreement, signed last December granting a 10-cents-an-hour increase, was for the 18 months from September 1, 1941, the retroactive date, and any demands for more pay would be a war-time development of the settlement.

Peaches Moved with No Delay

Despite the heavy movement of war traffic and other commodities, the Southern takes satisfaction in its recent prompt and successful handling of 7,549 cars of peaches from Georgia, Tennessee and the Carolinas to the East and Middle West for the season just ended. More than two hundred special trains were operated to expedite this perishable movement.

The bulk of the peaches were handled

* * *

Tanks Bound for Overseas Do the First Lap of Their Journey on the Canadian National

News Department continued on next left-hand page

THE FRANKLIN SYSTEM OF STEAM DISTRIBUTION

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THE LOCOMOTIVE BOOSTER

INCREASED CAPACITY FOR OVERWORKED LOCOMOTIVES

The unprecedented increase of traffic and the difficulty of obtaining new power have imposed a tremendous burden on our railroads. Therefore, it is imperative that they increase the capacity of existing power.

The means for doing this is at hand.

The Franklin System of Steam Distribution provides at least a third more train load-speed capacity.

The Booster* increases the drawbar pull for starting, accelerating and in any tight place.

With these capacity-increasing factors your locomotives will haul more tonnage at higher speeds.

FRANKLIN RAILWAY SUPPLY COMPANY, INC. NEW YORK CHICAGO

In Canada: FRANKLIN RAILWAY SUPPLY COMPANY, LIMITED, MONTREAL

through Inman Yards, the Southern's Atlanta terminal, and Spencer, N. C., where the cars were re-iced and assembled into special trains for fast movement to distant markets.

Due to curtailed production and marketing, the Georgia peach crop was approximately one thousand cars under last year, though the total movement handled by the Southern from the several peach-growing states decreased but 558 cars, and increased 780 cars over 1940 and 1791 cars over 1939 movements.

Boilermakers Union to Accept Women Members

For the first time in the 62 years since the founding of the International Brotherhood of Boilermakers, women are being admitted to membership. Admission of women workers was decided upon by a referendum of the brotherhood's executive council on September 18, but the decision will be submitted to the next convention for ratification. The council's action was taken to comply with requests of the government to solve the problem created by the employment of women in shipyards and other war projects.

Container Bureau Manual

The Freight Container Bureau of the Association of American Railroads, 30 Vesey street, New York, has prepared Freight Container Bureau Manual No. 901, covering regulations for preparing finished rounds containers for shipment, and rules for loading them in cars. The manual was prepared at the request of the Chief of Ordnance of the War Department.

Senate Committee Approves Revamping Bill

The Senate interestate commerce committee has voted to report the House-approved bill, H.R.7121, which would reenact chapter 15 of the Bankruptcy Act providing for voluntary reorganizations of railroad companies. The only change that the Senate committee made in the House version of the bill was to limit the life of the measure to three years.

Mid-West Board to Meet at Chicago October 1

The Mid-West Shippers Advisory Board will hold its sixtieth regular meeting at Chicago on October 1. Highlights of the meeting will be addresses by Fred S. Keiser, transportation consultant of the Office of Defense Transportation at Chicago, and L. M. Belts, manager of the Railroad Relations section of the Car Service division of the Association of American Railroads.

Rhode Island Commutation Fares

Reporting on the No. 28827 proceeding involving the refusal of the Public Utility Commissioner of Rhode Island to permit the New York, New Haven & Hartford to apply the Ex Parte 148 increases to intrastate commutation fares within that state, the Interstate Commerce Commission has found that such refusal causes undue preference of intrastate commuters and unreasonable prejudice against those traveling interstate. In accordance with the usual practice in such cases, the commission left to the railroad and the administrator the matter of adjusting the intrastate fares to conform to these findings; but if the adjustment is not accomplished within 60 days, "consideration will be given to the entry of an appropriate order."

A dissenting expression came from Commissioner Splawn, and Commissioner Mahaffie joined in it; while the dissent of Chairman Aitchison was noted.

Trainmen's Wages — Correction

In an editorial, entitled "Trainmen's Hours of Work," on page 400 in our September 12 issue, a table was presented showing hours of labor and compensation of representative classes of train and engine service employees in May, this year, compared to May, 1941, and May, 1929.

Columns 4 and 7 in that table showing, respectively, compensation for straight time and overtime for May, 1942, were erroneously headed "May, 1941." While the context makes the intent of the figures reasonably obvious—the error (in transcription) is not easily excusable, and is deeply regretted.

Changes in U. S. Chamber's Organization Set-Up

Appointment of Ralph Bradford as general manager of the Chamber of Commerce of the United States was announced September 24 by Eric A. Johnston, chamber president. Mr. Bradford, secretary of the Chamber since 1939, was named to the newly created office by the chamber's board of directors "as a step in the general reorganization of the chamber's machinery of operation now under way."

As general manager, Mr. Bradford will have full direction, under the president and the board of directors, of the chamber's operations. The board also authorized a number of changes in the organization's set-up, designed to speed up and simplify the chamber's operations. "The new streamlined organization," the announcement said, "puts major activities under twelve main groupings, all under the direction of Mr. Bradford. Nine departments representing the broad general divisions of business make up one of the general groupings. They are agriculture; construction and civic development; domestic distribution; finance; foreign commerce; insurance; manufacture; natural resources; and transportation and communication. The eleven other general groupings are public relations; divisional relations; service for chambers of commerce; service for trade associations; war information service; administration; legislative; field; research and legal; Nation's Business magazine; and American section of the International Chamber of Commerce."

"Railroadin' " Still Going Strong

Judging by attendance figures for the first six months, by the end of this year over 1,000,000 people will have seen "Railroadin'," the film made jointly by the American Locomotive Company and the General Electric Company. Filmed for educational purposes for use in schools, colleges, clubs, and by the railroads themselves, General Electric and American Locomotive have exhibited the picture before more than 222,000 since the first of the year. The Pennsylvania reported attendance figures in excess of 170,000, and reports from other lines and still other sources indicate that the film was exhibited to more than half a million during the first six months.

"Railroadin' " is peopled by well-known Hollywood actors and was directed by John Boland, who, with his crew of technicians, visited 23 states and traveled 50,000 miles shooting the film. Director Boland and his staff were assisted by Clarence Bailey, General Electric transportation representative, who arranged the "shooting" sequences in advance so as not to conflict with the railroads' operating schedules. Various railroad executives gave freely of their time and ability, and several members of the railroads' personnel acted as guides and technical advisors

* * *

Locomotive Parts Reclaimed at the Pennsylvania's Altoona Works

Research is developing new methods to make old parts usable again, and metal formerly scrapped is being reworked to make small parts and tools now difficult to obtain.

News Department continued on next left-hand page

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is maximum ton-miles from every pound of fuel!

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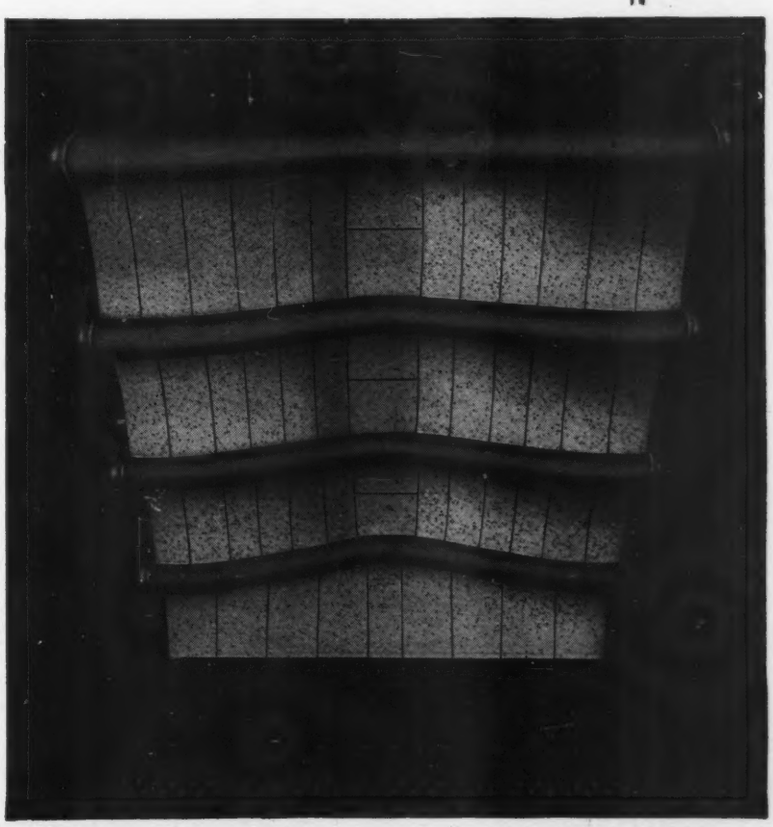
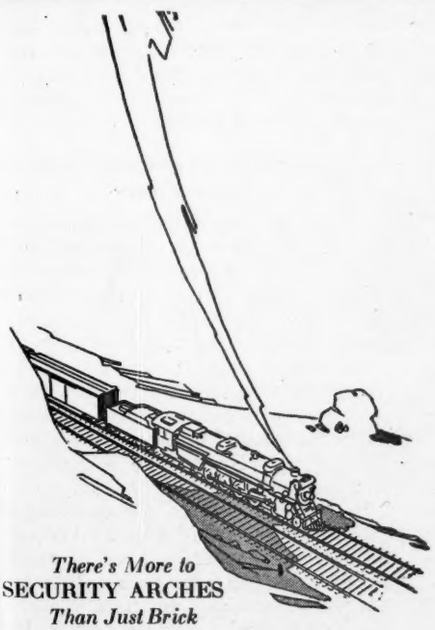
Security Arch Brick are made from selected clays and carefully burned to assure maximum arch life in the locomotive firebox.

By every standard of value Security Arch Brick assures maximum economy.





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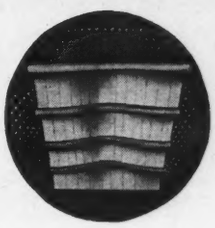

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Locomotive Combustion Specialists

throughout the filming of the picture.

"Railroadin'" is a 16-mm film in full sound and color, and runs thirty minutes. It is available at the main office of the American Locomotive Company, 30 Church street, New York, at the General Electric Company, Schenectady, N. Y., and at the various district offices of both companies. Copies of the film may be borrowed at no cost other than charges incidental to the shipping of the film, and descriptive literature for prior distribution, including black and white stills from the picture, is also available.

Freight Car Loading

Carloadings in the September 19 week totaled 903,099—a decrease of 4,870 or 0.5 per cent under 1941, but an increase of 89,770 or 11 per cent over 1940, and an increase of 88,214 or 10.8 per cent over the preceding week (which included the Labor Day holiday).

As reported in last week's issue, loadings of revenue freight for the week ended September 12 totaled 814,885 cars, and the summary for that week, compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loadings

For Week Ended Saturday, September 12

District	1942	1941	1940
Eastern	145,426	185,708	163,059
Allegheny	173,386	201,891	170,716
Pocahontas	53,369	60,722	51,627
Southern	113,124	124,848	107,583
Northwestern	141,542	147,647	141,572
Central Western	121,847	133,209	116,577
Southwestern	66,191	60,631	53,131
Total Western Districts	329,580	341,487	311,280
Total All Roads	814,885	914,656	804,265
Commodities			
Grain and grain products	45,396	45,046	42,494
Live stock	15,336	14,452	17,379
Coal	153,490	171,792	140,121
Coke	13,429	12,946	11,148
Forest products	46,291	46,812	40,438
Ore	82,676	74,448	73,702
Merchandise l.c.l	79,278	158,912	156,442
Miscellaneous	378,989	390,248	322,541
September 12	814,885	914,656	804,265
September 5	887,960	797,991	695,094
August 29	899,419	912,720	768,775
August 22	869,404	899,788	761,108
August 15	868,845	890,337	743,050
Cumulative Total, 37 Weeks	30,435,366	29,439,986	24,954,277

In Canada.—Carloadings for the week ended September 12 totaled 60,995, as compared with 67,530 in the previous week and 70,421 last year (there being no holiday in last year's second September week). The summary by the Dominion Bureau of Statistics is as follows:

Total for Canada:	Total Cars Loaded	Total Cars Rec'd from Connections
Sept. 12, 1942	60,995	33,904
Sept. 5, 1942	67,530	38,023
Aug. 29, 1942	66,343	37,117
Sept. 13, 1941	70,421	30,757
Cumulative Totals for Canada:		
Sept. 12, 1942	2,352,576	1,235,909
Sept. 13, 1941	2,192,551	1,081,933
Sept. 14, 1940	1,920,581	898,730

Equipment Installed

Class I railroads put 53,695 new freight cars in service in the first eight months of 1942, according to the Association of American Railroads. Included were 33,402 box, 17,165 coal, 1,575 flat, 540 refrigerator, 100 stock, and 913 miscellaneous freight cars.

New freight cars on order on September 1, totaled 35,063, compared with 92,033 on the same day last year. Class I roads had on order on September 1, this year, 13,097 box, 17,946 coal, 2,262 flat, 868 refrigerator, 200 stock, and 690 miscellaneous freight cars.

Railroads in the first eight months of 1942 installed 514 locomotives of which 207 were steam and 307 were electric and Diesel-electric. In the same period last year they put 372 new locomotives in service of which 84 were steam and 288 were electric and Diesel-electric.

New locomotives on order on September 1, totaled 861 which included 323 steam and 538 electric and Diesel-electric. On September 1, last year, they had 611 new locomotives on order including 317 steam and 294 new electric and Diesel-electric.

Trainmen's Union Sued for Pension Fund Accounting

Suit for an accounting of an estimated $4,000,000 contributed by members to a pension fund of the Brotherhood of Railroad Trainmen during the years from 1926 to 1935 was filed in the Superior Court at Chicago on September 18 by Grover C. Portner, Aurora, Ill. The suit alleged that union officers have failed to reimburse contributors after the plan was discontinued in favor of a government pension plan in 1936.

Ann Arbor Gets Certificate for Lake Michigan Ferry

The Interstate Commerce Commission, Division 4, has granted the Ann Arbor a "grandfather-clause" certificate under Part III of the Interstate Commerce Act, covering operations as a common carrier by water in the transportation of passengers and vehicles loaded or empty when accompanied by drivers between the Lake Michigan ports of Frankfort, Mich., Manistique, Menominee, Kewaunee, Wis., and Manitowoc. The ferry operations insofar as they involve the transportation of railroad cars were found to be exempt from Part III.

Engine Wage Mediation

Mediation of the demands of enginemen and those of firemen for a new basis for computing wages on Western lines was begun at Chicago on September 22. The demands of the Brotherhood of Locomotive Firemen & Enginemen are being heard by George A. Cook, chairman of the National Mediation Board, and those of the Brotherhood of Locomotive Engineers are being heard by David J. Lewis, a member of the board. The demands of the enginemen, made on March 18, 1939, call for rates of pay based on horsepower of Diesels and for an assistant engineer in the engine rooms of certain types of Diesel locomotives.

Those of the firemen, made on May 10, 1941, seek changes in agreements covering the rates of pay, rules and working conditions of firemen, helpers, hostlers and hostler helpers. This request proposes that the rates of pay for firemen and helpers on steam and electric locomotives be based upon the total weight of the locomotive rather than upon the weight on drivers and that the rates of pay for firemen on Diesel-electric locomotives be based upon horsepower rather than upon weight on drivers. They also demand a fireman or helper on each unit of a Diesel.

Pittsburgh Scrap Collectors Get a Train Shed

One of the largest contributions made in the Pittsburgh district to the national scrap salvage drive is the steel frame and copper work in the vaulted train shed of the former passenger station there of the Pittsburgh & West Virginia, built early in this century by the Wabash Pittsburgh Terminal as a part of the transcontinental railway system projected by the so-called Gould lines. Passenger service was discontinued several years ago into the station, which is located near the heart of the city's downtown business section. Iron and bronze grillwork from the station building also is being contributed to the scrap collection.

Pullman Suggestion System Helps War Effort

Suggestions being received from employees by the Pullman Company under its suggestion system are aiding the war drive, according to E. S. Taylor, director of the system. These suggestions, which are being received at the rate of 500 a week, are ideas for the elimination of waste time, for the conservation of material and power, for the prevention of accidents and fires, for the simplification of clerical work and for the betterment of service and maintenance.

During the 18 months in which the system has been operative, more than 40,000 suggestions have been submitted of which 4,429 have been approved. A total of 1,906 workers have been paid $50,615 in amounts ranging from $5 to $70.

St. Louis Asks Expensive Railroad Alterations

A hearing before the Interstate Commerce Commission on the demand of St. Louis for the removal of the river front elevated tracks of the Terminal Railroad Association was begun on September 17 before Examiner George Mattingly. The commission is asked by the city to order the tracks removed so that the elevated structure will not mar the site upon which the city is building Jefferson Memorial National Park. The hearing is expected to continue until October 1 or later.

In the same hearing, the examiner will take up the request of East St. Louis that the Terminal be ordered to construct a $700,000 passenger station at Main street and Brady avenue. Fourteen roads, including Terminal, are named as defendants. It is expected that 19 railway brotherhoods will seek permission to intervene in opposition to the city's track removal plan.

The changes requested by the city call for two surface tracks just east of the present elevated line parallel to and within a few feet of the double tracks of the Missouri Pacific and new connecting tracks to the Municipal bridge on the east side of the river, at a total cost of approximately

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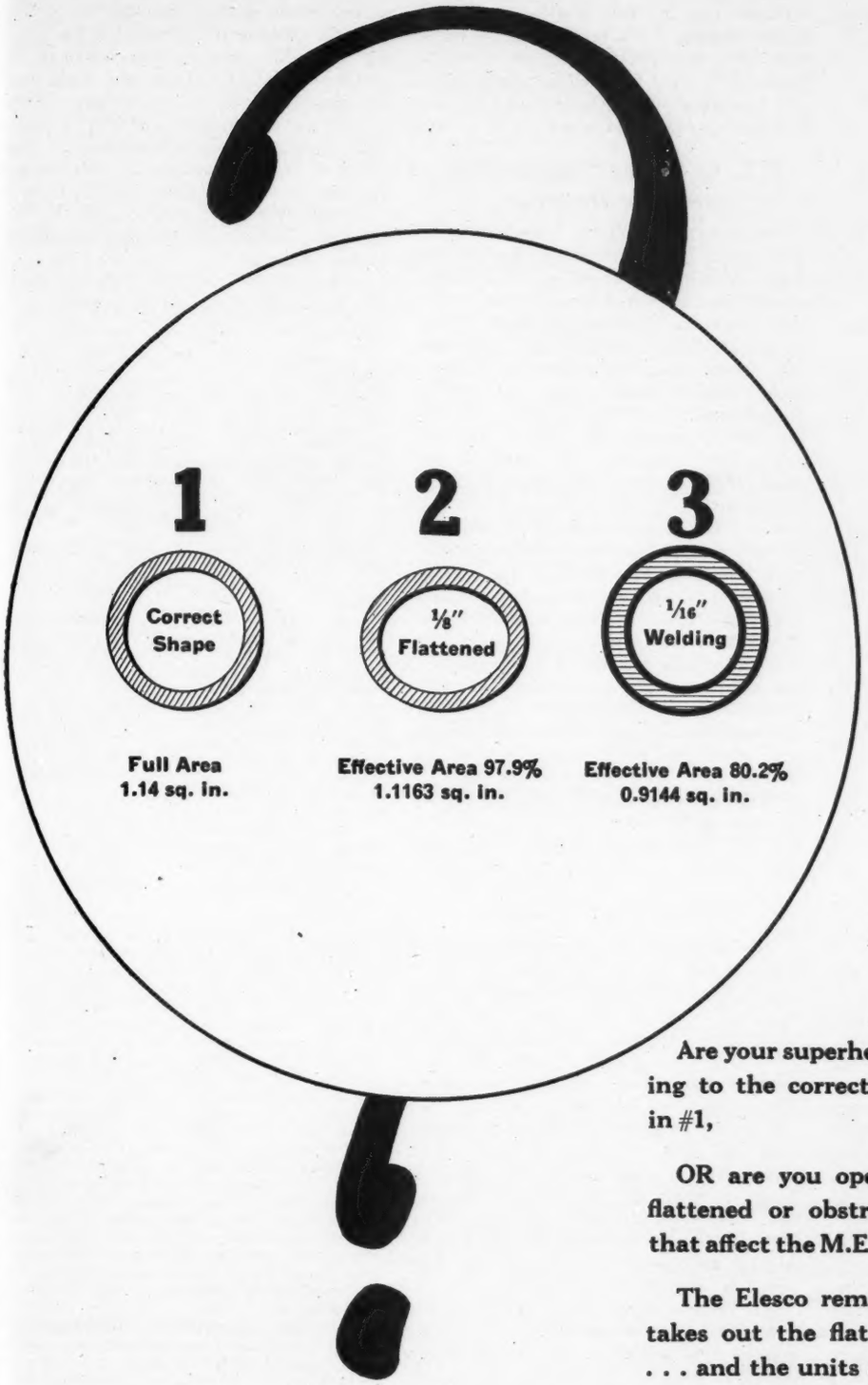

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$1,000,000. East St. Louis bases its demand for a new station on the contention that the present Relay station is antiquated and that its location requires passengers to cross many tracks.

One of the points of contention is who should bear the cost. The city contends that the railroads should bear all the cost and held that the apportionment of cost should not be argued at the hearing. The railroads take the position that if the general community is to share in the benefits of the city's proposal, it should pay part of the cost.

I.C.C. Authorizes Additional Express Rate Increases

Completing its findings on the rate-increase proposals made by the Railway Express Agency, Inc., last December, the Interstate Commerce Commission has now vacated its order suspending an emergency charge of 10 cents per shipment on l. c. l. traffic which was not covered in previous findings. Those previous findings of last Spring paved the way for a realization of some $15,000,000 of the $17,000,000 increase in annual revenue expected to result from the whole proposal, i. e., they vacated the suspension of the emergency charges on l. c. l. shipments of first, second, and third class or multiples thereof, and on shipments of money, and authorized increases in line with the Ex Parte 148 rail adjustment in truck-competitive express commodity rates, rates on milk and cream, and commodity rates on corpses.

Thus the effect of the present decision will be an additional increase in R. E. A. annual revenues by less than $2,000,000. The figure, as estimated at the hearing, was $1,853,395 on the basis of 1941 traffic. It was pointed out however that neither this nor the $15,000,000 expected from the previously-authorized increases is apt to be realized because l. c. l. express shipments in the first five months of 1942 were 4,936,143 fewer than in the comparable 1941 period. While it was conceded that there had been some diversion to cheaper forms of transportation, R. E. A. attributed this loss of traffic mainly to the discontinuance of the manufacture of many articles and materials which comprise a substantial part of the normal express traffic. And, the I. C. C. report added, "it is expected that the reduction in the number of shipments will be greater each succeeding month as the manufacture of consumer goods is further restricted."

It was stated, however, that the same situation does not exist as to commodity traffic "which comprises mostly perishable freight." From all available information R. E. A. estimates that the number of l. c. l. shipments in 1942, including commodity shipments, "may not exceed 150,000,000," as compared with 171,108,859 in 1941. This would mean that the rate increases authorized would fall short by approximately $1,867,536 of meeting the increased wages and other costs they were designed to offset.

Commissioner Mahaffie in a brief dissenting expression objected to the flat 10-cent increase, which "entirely disregards the value and weight of the package as well as the amount of the charge to which the 10 cents is to be added." As Mr. Mahaffie sees it, "this is close to default in rate making." He was inclined to think that "a 10 per cent increase with a maximum of 10 cents per package could properly be authorized." The dissent of Commissioner Splawn was noted.

I. C. C. Begins Classification and Rate Hearings

Public hearings on an investigation of class rates in the territory east of the Rocky Mountains and on the consolidated freight classification, initiated by the Interstate Commerce Commission, began at Indianapolis, Ind., September 22. The class rate investigation bears the Commission's docket number 28300, and the classification docket number is 28310. Chairman Aitchison and Commissioners Splawn and Aldredge are conducting the hearings, and state public service commissions also are represented.

A number of cost studies and statistical exhibits prepared by the Commission's staff were introduced as a basis for the presentation of evidence, and some of these data were challenged by railroad representatives. A variety of exhibits and cost and traffic studies are to be presented by witnesses for the railroads. The first witnesses heard discussed rate and traffic data compiled by railroads in the South, but their testimony was interrupted so that members of the commissions might attend the convention of Association of Interstate Commerce Practitioners in the same city. It is expected that the rate and classification hearings will continue for several weeks.

Track Supply Exhibit

In conjunction with the fifty-seventh annual meeting of the Roadmasters' Association, 45 manufacturers of materials and equipment used in the construction and maintenance of track presented a timely exhibit of their products under the auspices of the Track Supply Association. The exhibit was held in the exhibit hall and on the mezzanine of the Hotel Sherman, one floor below the meeting room, where it was conveniently accessible to those attending the convention. The exhibit was moved this year from the Hotel Stevens, where it has been held since 1929, because the government has taken over this hotel for use of the Army.

The officers of the Track Supply Association who were responsible for the preparation and conduct of the exhibit were: president, Ross M. Blackburn, Buda Company, Chicago; first vice-president, H. C. Hickey. The Rail Joint Company, Inc., Chicago; second vice-president, H. M. McFarlane, O. F. Jordan Co., East Chicago, Ind.; secretary-treasurer, Lewis Thomas, Q. & C. Company, Chicago; directors, E. C. Argust, Morden Frog & Crossing Works, Chicago (ex-officio); A. B. Hillman, Belt Railway of Chicago, Chicago (honorary); T. D. Crowley, The Creepcheck Co., Inc., Chicago; H. W. Cutshall, Electric Tamper & Equipment Co., Chicago; C. B. Armstrong, Air Reduction Sales Co., Chicago; F. A. McGonigle, Mall Tool Company, Chicago; C. O. Jenista, Barco Manufacturing Company, Chicago; and J. B. Templeton, Templeton, Kenly & Co., Chicago.

In the election of officers for the coming year, Mr. Hickey was advanced to president; Mr. McFarlane was made first vice-president; Mr. Crowley was elected second vice-president; and Mr. Thomas was re-elected secretary-treasurer. The newly elected directors are Mr. McGonigle (re-elected); L. I. Martin, Morden Frog & Crossing Works, Chicago; and H. A. Morrison, Railway Engineering and Maintenance, Chicago.

A list of the exhibitors, the products shown and the names of their representatives follows:

Air Reduction Sales Company, New York—Literature—C. B. Armstrong, C. A. Daley, J. F. Franzen, J. W. Kenefic, L. C. McDowell, U. F. Portell, D. N. Newland, E. F. Turner.

American Fork & Hoe Company, Cleveland, Ohio—Rail anchors; tapered rail-joint shims; shovels; weed cutters; ballast forks; rakes; scuffle hoes; broom rakes; axes; hammers; scythes—H. C. Branahl, C. C. Connolly, S. L. Henderson, J. J. Nolan, D. L. O'Brien, Frank J. Reagan, John Skeel, R. J. Whalen.

Barco Manufacturing Company, Chicago—Gasoline tie tampers; gasoline hammer—F. N. Bard, W. J. Belhke, C. O. Jenista, W. T. Jones, C. L. Mellor.

Buda Company, Harvey, Ill.—Inspection motor car; 2-4 men inspection car; switch stand; bonding drill; track drill; track liner; rail bender; journal jacks; track jacks; hydraulic jacks; pole jacks; automatic lowering jacks; tie puller; tie nipper; light section car; track gages; track level; and nozzle tester—James B. Akers, R. M. Blackburn, H. H. Cohenour, J. S. Dempsey, R. B. Fisher, W. H. Haas, J. F. Hartley, R. K. Mangan, R. J. Mulroney, D. Richards, M. J. Rotroff, J. W. Sanford, G. A. Secor, L. O. Stratton, R. P. Williamson.

Chipman Chemical Company, Inc., Bound Brook, N. J.—Weed killer—C. M. Bernuth, N. J. Leavitt, W. H. Moyer, I. J. Strain.

Creepcheck Company, Inc., Pittsburgh, Pa.—Rail anchors—T. D. Crowley, N. A. Howell.

Crerar, Adams & Co., Chicago—Track and bonding drills; track tools; pipe wrenches; tool handles; tie, lumber and other marking crayons; air skilsaws and electric hand drills; track and switch brooms—R. W. Beasant, Geo. J. Doyle, A. Kopala, I. E. Poehler, J. M. Temple.

Cullen-Friestedt Company, Chicago — Moving pictures of Burro locomotive crane in operation; rail tongs—W. C. Bamber, K. J. Beller, L. B. Bertaux, C. J. Bronez, E. V. Cullen, F. J. Cullen, F. P. Cullen, T. G. Frazee, Robert W. Jamison, F. L. Kendig, Jos. F. Leonard, G. G. Prest, James E. Simkins, Wm. J. Roehl.

A. P. deSanno & Son, Inc., Phoenixville, Pa.—Grinding wheels—N. A. Conway, Jr., Wm. Lukey, L. G. Martin, E. J. Rohan.

W. S. Dickey Clay Manufacturing Co., Kansas City, Mo., and Robinson Clay Products Co., Akron, Ohio—Clay cradle invert pipe; demonstration of hydraulic characteristics of various pipes; motion pictures of typical drainage installations—H. W. DeBacher, C. M. Huckins, C. R. Scheid; W. C. Slee.

Duff-Norton Manufacturing Company, Pittsburgh, Pa.—Track jacks; power jacks; journal jacks; automatic lowering jacks; tie spacers; tie remover—E. C. Gunther, J. F. Van Nort.

Eagle Grinding Wheel Company, Chicago—Grinding wheels—John Abram, L. E. Buckingham, R. S. Lloyd, J. C. Rinehart.

Elastic Rail Spike Corporation, New York—Elastic rail spikes—C. M. Bernuth, A. C. Jack, B. Kuckuck, George W. Muller, A. J. Reading.

Electric Tamper & Equipment Company, Ludington, Mich.—Electric tie tampers; 4 and 8-tool power units; concrete vibrator tamping tools; and assorted blades—H. W. Cutshall, J. F. Hensel, Raymond Hermann, G. L. Walters.

Fairmont Railway Motors, Inc., Fairmont, Minn.—Inspection car; section car; and extra-gang bridge and building car—C. P. Benning, W. D. Brooks, Kenneth Cavins, W. G. Day, W. F. Kasper, J. T. McMahon, V. Pagett, Ralph W. Payne, C. L. Rager, W. H. Ripken, H. A. Sly, William Williamson.

Hayes Track Appliance Company, Richmond, Ind.—Literature and models of bumping post;

derails and wheel stops—R. A. Downing, S. W. Hayes, Herbert J. Mayer, P. C. McClure.

George M. Hogan & Co., Chicago—One-man track tool—V. G. Cartier, J. T. Flynn, G. M. Hogan, D. L. O'Brien, Stanley H. Smith.

Illinois Malleable Iron Company, Railroad Division, Chicago—Rail anchors—Chas. G. Ericson, Dayton T. Hogg, John C. Kuhns, H. A. Morean.

O. F. Jordan Company, East Chicago, Ind.—Model and pictures of spreader ditcher and snow plow—A. W. Banton, J. C. Forbes, H. M. McFarlane, C. W. Shipley.

Kalamazoo Railway Supply Company, Kalamazoo, Mich.—One-man inspection car; differential axle; motor-car wheels; track gage and level; and extra gang power car—H. O. Christian, Ralph E. Keller, Frank E. McAllister, G. Monroe, E. C. Poehler, P. J. Robischung.

Lundie Engineering Corporation, New York—Rail clips; tie plates; tie tongs; rail lubricator—L. B. Armstrong, O. W. Youngquist.

Maintenance Equipment Company, Chicago—Switch-point protector; rail and flange lubricator; and literature—E. Overmier, T. E. Rodman, P. A. Wells, H. V. West, P. J. Wolf.

Mall Tool Company, Chicago—Gasoline and electric rail grinders; concrete vibrators and surfacers; bridge and building machines; gasoline, electric and air-driven chain saws; gasoline and electric drills and circular saws; pneumatic circular saws; flexible-shaft grinders and polishers; sump pump—R. F. Burgwald, S. Gromnicki, J. Innes, A. W. Mall, F. A. McGonigle, M. Rhenquist.

Morden Frog & Crossing Works, Chicago—Adjustable rail braces; forged steel braces; new saw-toothed adjustment for adjustable braces—E. C. Argust, W. Homer Hartz, G. F. Killmer, L. I. Martin, L. C. Reebs.

Murdock Manufacturing & Supply Co., Cincinnati, Ohio—Air-lock water service box and post hydrant; air valves, anti-freezing outdoor drinking fountains; drinking fountain—Thomas E. Bart.

Nordberg Manufacturing Company, Milwaukee, Wis.—Rail grinders; track power drill; power track wrench; utility rail grinders; surface grinders; precision grinders; accessories—W. E. Bugbee, C. P. Clemmens, W. W. Fitzpatrick, John Hogan, C. K. Jensch, Eugene Larson, Ralph W. Payne, F. M. Read, Stanley H. Smith, H. H. Talboys.

Oxweld Railroad Service Company, Chicago—Oxy-acetylene welding and cutting apparatus; oxygen; acetylene; carbide; rail butt welding; flame cleaning; heat-treating of rail ends; wrinkle bending pipe; angle bar straightening—Lem Adams, M. C. Bevmer, G. P. Bogert, M. Burnett, Jr., W. E. Campbell; F. J. Duffie, H. V. Gigandet; E. B. Hall, Jr., F. C. Hasse, P. Hunter, Jr., R. G. Kohn, G. B. Moynahan, D. H. Pittman, J. H. Rodger, H. W. Schulze, J. C. Stephenson, F. E. Teichen, R. W. Torbert, J. E. Winslow.

P. & M. Company, Chicago—Rail anti-creepers—D. T. Hallberg, G. E. Johnson, J. E. Mahoney, W. A. Maxwell, J. J. Metzger, F. A. Preston, M. K. Ruppert.

Pettibone Mulliken Corporation, Chicago—Automatic switch stand; switch stands; shoulder bolts—W. A. Enstrom, W. A. Flint, C. A. Johnson, James Keenan, G. J. Slibeck.

Pocket List of Railroad Officials, New York—Copies of Pocket List of Railroad Officials—B. J. Wilson.

Positive Rail Anchor Company, Chicago—Rail anchors; guard-rail plates and braces; adjustable rail braces—L. C. Ferguson, R. J. Platt.

Motion pictures of power track ballaster and power track cribbing machines.

Power Ballaster Company, Chicago—W. E. Bugbee, F. H. Philbrick, Stanley H. Smith.

Q & C Company, New York—Guard-rail clamp; switch-point guard; compromise joints; derail; gaging tools; wheel stops; rail tongs; gage rods; flange-way guard; adjustable rail brace; electric switch heater—L. E. Hassman, M. Iseldyke, G. Prest, Lewis Thomas.

Rail Joint Company, Inc., The, New York—Insulated rail joints; standard joints; compromise joints; and fibre insulation—Alex Chapman, E. A. Condit, Harry C. Hickey, G. H. Larson, H. L. Lansing, J. N. Meade, R. W. Payne, Thomas Ryan, Frank Wood.

Rails Company, The, New Haven, Conn.—M. & L. track; compression track fastenings; compression screw spike; oil, switch heaters; spring spike; automatic switch lock; strip welding for building up battered rail ends—R. E. Bell, L. T. Burwell, W. A. Peck, Wayne Sullivant, J. V. Wescott.

Railway Engineering and Maintenance, Chicago—Copies of Railway Engineering and Maintenance and Railway Age—G. E. Boyd, C. M. Burpee, M. H. Dick, S. W. Hickey, N. D. Howard, Elmer T. Howson, P. D. Juraschek, F. C. Koch, H. E. MacCandless, C. W. Merriken, H. A. Morrison, J. S. Vreeland.

Railway Maintenance Corporation, Pittsburgh, Pa.—RMC plastic cakes for joint lubrication; pictures of plastic joint packing; literature on ballast cleaner—R. M. Jenner, J. B. McWilliams, J. E. Mountford.

Railway Purchases and Stores, Chicago—Copies of publication—K. F. Sheeran, Edward Wray.

Railway Track-Work Company, Philadelphia, Pa.—Literature on drills, grinders and grinding wheels—A. M. Nardini, J. Roche.

Reade Manufacturing Company, Jersey City, N. J.—D. M. DeWitt, C. F. Reade, C. H. Reade.

Sperry Rail Service, Hoboken, N. J.—Examples of transverse fissures, engine-burn fractures and flash butt welds; literature—J. M. Dickey, C. W. Gennet, Jr., W. P. Morrison, C. A. Stephenson.

Templeton, Kenly & Co., Ltd., Chicago—Track, bridge and journal jacks, with exclusive wheel hold-down car-retarder jacks; telephone pole jack; tie spacer; rail puller and expander; claw bar—R. B. Hill, P. H. McManus, William Simpson, J. B. Templeton, W. B. Templeton.

U. S. Wind Engine & Pump Company, Batavia, Ill.—Float valve, pump jack, switch stands—C. E. Ward.

Woodings-Verona Tool Works, and Woodings Forge & Tool Company, Verona, Pa.—Rail anchors; triflex springs—A. C. Laessig, R. J. McComb, J. M. Moore, W. H. Woodings.

Woolery Machine Company, Minneapolis, Minn.—Tie cutting machine; creosote-spray machine, weed burner—A. J. Franke, Derby Weston, H. E. Woolery.

Supply Trade

Electro-Motive Commemorates 20 Years Service to Railways

The Electro-Motive Division of General Motors Corporation, La Grange, Ill., on September 15, commemorated 20 years of service to the railroads. At a dinner program, recognition was given 28 men in the organization who have been employed for 15 years or more in the production and sale of Diesel-powered locomotives. The 20 years of service to the railways dates back to 1922 when the Electro-Motive Engineering Company, Cleveland, Ohio, was organized. On January 1, 1941, the Electro-Motive Company became a division of General Motors Corporation.

In commenting upon the company's service, H. L. Hamilton, vice-president, said, "I attribute the rapid and steady growth of Electro-Motive to the constant and continued efforts of the organization toward the improvement and operating efficiency of the product we have to offer. It is difficult to foresee just what the post-war period will bring forth in necessary transportation facilities on land, on sea, or in the air, but I am confident that we can look forward to an era of highly efficient transportation needs, and Electro-Motive will certainly play an important part in providing the motive equipment."

A. G. York, formerly assistant to the president and managing director of the Forged Steel Fittings division of the **Watson-Stillman Co.,** Roselle, N. J., makers of hydraulic machinery and equipment, has been appointed vice-president in charge of sales for the entire company. He fills the vacancy created August 28 by the resignation of **J. C. Grindley** as sales manager of the Hydraulic Machinery division due to ill health. For the immediate future no successor will be named to Mr. York's position as manager director of the Forged Steel Fittings division, as he will continue to carry on the direction of this part of the company. Other appointments announced by this company include R. W. Dinzl, vice-president in charge of engineering; F. H. Stillman, assistant to the president and assistant secretary; and William Woidt, assistant secretary.

The **Independent Pneumatic Tool Company,** Chicago, has moved its Boston, Mass., office to 79 Brookline avenue and its Birmingham, Ala., office to 1411 North Third avenue. **Vance G. Turner** has been appointed manager of the Boston office.

The Gisholt Machine Company, Madison, Wis., was awarded the Army-Navy "E" pennant for high achievement in the production of war equipment on August 28 at impressive ceremonies, witnessed by more than 6,000 persons, held at the company's plant.

William Sellers & Co., machine tool builders of Philadelphia, Pa., were presented with the Army-Navy "E" award for achievement in producing war equipment at the company's plant on September 11. Commander J. F. Cleary of the United States Navy, in presenting the pennant, commented on the fact that the company was aiding the Army and Navy in the fourth war since it began building machine tools in 1848.

Charles E. Wilson, president of the General Electric Company, has been appointed a vice-chairman of the War Production Board. In this post, Mr. Wilson will also serve as chairman of the newly-organized Production Executive Committee, and will exercise the powers of the chairman of the War Production Board in seeing to it that production programs are met. The Production Executive Committee was formed to bring together top officials in the War Production Board, the Army, the Army Air Corps, the Navy and the Maritime Commission to maintain a constant check and control on the production program. Mr. Wilson, who will serve on a dollar-a-year basis, has been president of General Electric since 1940. He has been in the electrical industry since 1899, when he went to work with the Sprague Electric Company in New York. In 1918, when the Sprague Electric Company was absorbed by General Electric, he became assistant general superintendent of the General Electric works at Maspeth, Long Island, N. Y., and New Kensington, Pa. In 1928, he became assistant to the vice-president, advancing to vice-president in 1930, and to executive vice-president in 1939.

Gerard Swope, former president of the General Electric Company, whom Mr. Wilson succeeded, and **Owen D. Young,** former chairman of the Board, have been recalled from retirement to resume those positions. **Philip D. Reed,** the present

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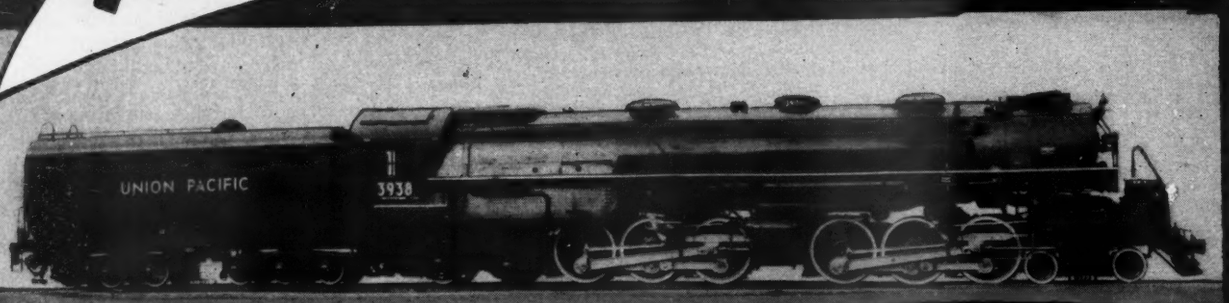
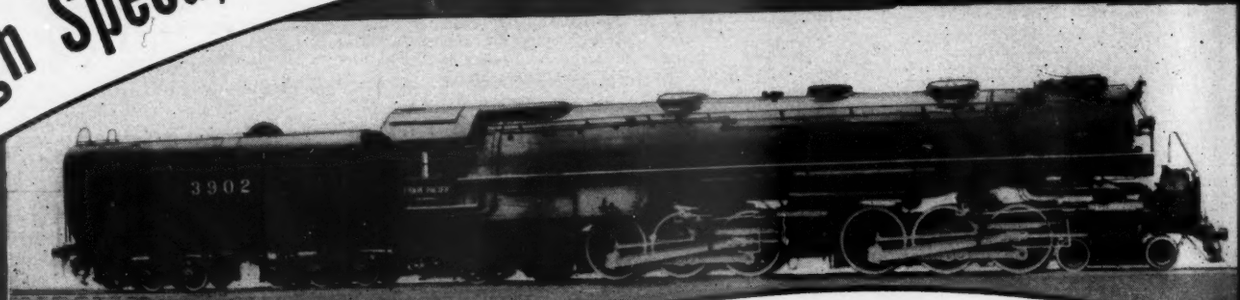
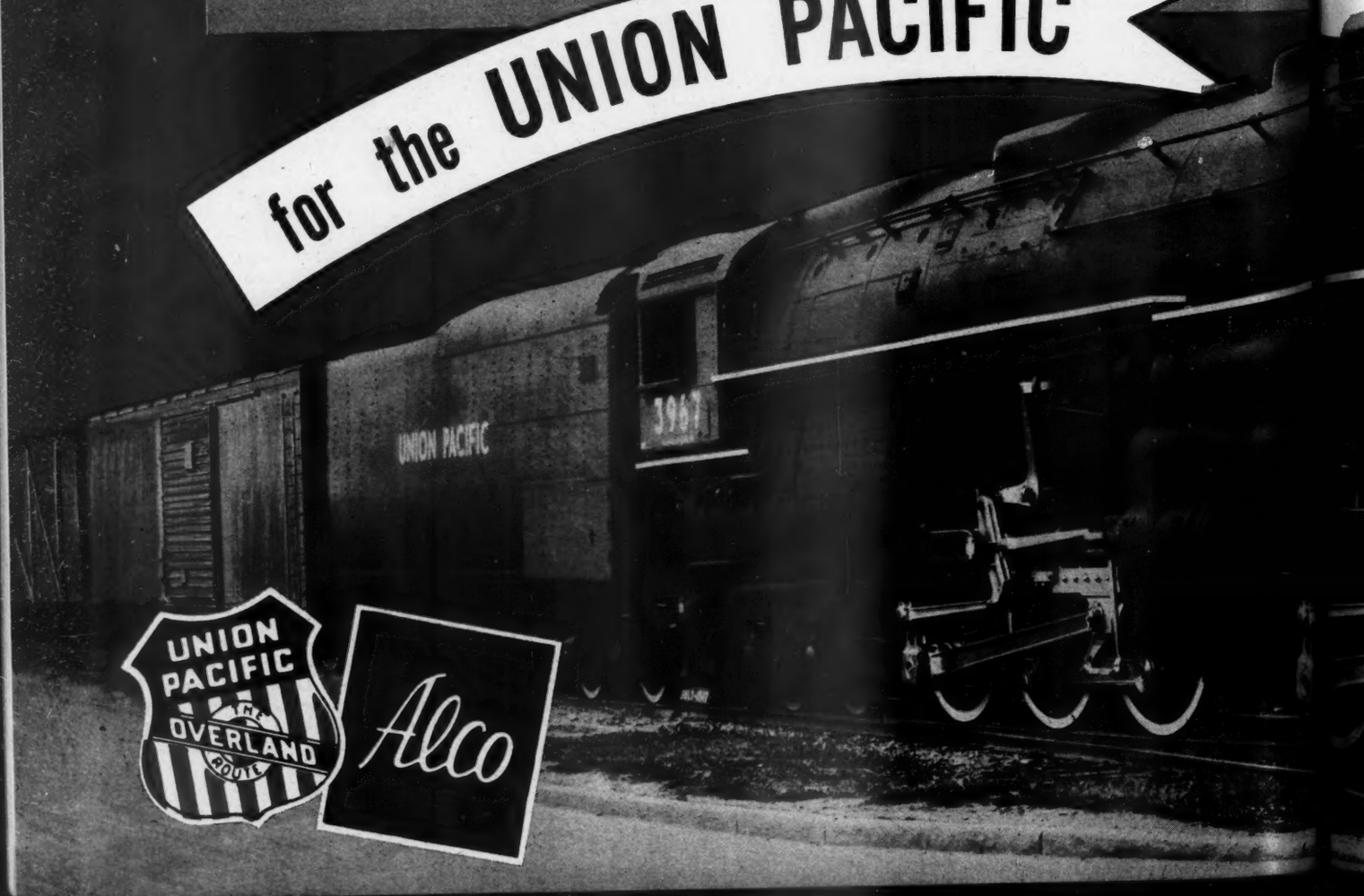
A FLEET OF SIXTY



High Speed, Heavy Duty Freight Locomotives



for the UNION PACIFIC



UNION PACIFIC
OVERLAND ROUTE

Alco

"For Their Size They Are the Best Performing Locomotives Ever Operated on the Union Pacific."

"The last of the 20 Union Pacific 4-6-6-4 type locomotives, No. 3969, is in service today hauling a 100-car train west out of Omaha as did all the others..."

That in part is the unanimous commendatory expression of Union Pacific engineering men and operating officials referring to the performance of the twenty new 4-6-6-4 type locomotives recently delivered by the American Locomotive Company.

The Union Pacific now has a fleet of 60 of these locomotives. The first 15 of this particular type were delivered in 1936 and 25 more in 1937. These single expansion 4-6-6-4 articulated steam locomotives, designed to operate in high-speed freight service in mountain territory, have rapidly received country-wide recognition. To date Alco has built, or has on order 155 of this type locomotive for six different roads.

The last order of twenty were specified to be capable of operating continuously under maximum horsepower output up to 70 miles per hour, to operate on grades of 3 per cent, and to pass curves of 20 degrees.

Locomotives are, without question, one of the most vital items in the entire war effort.

AMERICAN LOCOMOTIVE

Manufacturers of Mobile Power

Steam, Diesel and Electric Locomotives, Marine Diesels, Tanks, Gun Carriages and other Ordnance

chairman of the Board, is on leave of absence in Government service.

OBITUARY

Roy Hunter, direct sales representative in the northern Ohio and western Pennsylvania area for the Gisholt Machine Company, Madison, Wis., died September 12 at the age of 54. Prior to becoming a member of the Gisholt field sales personnel two and one-half years ago, Mr. Hunter was long associated with the International Machine Tool Company.

Robert R. Vinnedge, eastern manager of the railroad division of the Socony-Vacuum Oil Company, Inc., at New York, died September 1 after a short illness. He was 59 years of age. Mr. Vinnedge was graduated from Purdue University with a degree in mechanical engineering in 1904. He was formerly associated with the American International Corporation, and, until 1929, was eastern sales representative for the Galena Signal Oil Company. Since then, he had been in charge of railroad sales in the east for the Vacuum Oil Company and the Socony-Vacuum Oil Company, Inc.

Construction

CANADIAN NATIONAL. — A contract amounting to more than $20,000 has been awarded P. W. Graham & Sons, Moose Jaw, Sask., for reroofing 12 stalls, lengthening six stalls, and lengthening the engine pits in three stalls of the roundhouse at Biggar, Sask.

CHICAGO, ROCK ISLAND & PACIFIC.—This road has awarded four contracts for the construction of a 160-ft. by 100-ft. extension to its warm house at Minneapolis, Minn. The new construction will have a concrete foundation and platforms, a steel frame, insulated steel siding (except on one wall) and steel roof decking with a built-up insulated roof. One wall will be of brick construction to provide for a future extension of the fruit and produce terminal adjacent to the warm house. The total cost of the work will be about $46,000.

WAR DEPARTMENT.—The U. S. Engineer Office, Chicago, has awarded a contract in amount less than $500,000 to Longwill-Scott, Inc., St. Louis, Mo., for the construction of railroad track in Illinois. The U. S. Engineer Office, Portland, Ore., has awarded a contract in amount less than $500,000 to the Jacobsen-Jensen Company, Portland, for the construction of roads and railroads in Oregon, and this office has also awarded a contract in amount less than $50,000 to the Parker-Schram Company, Portland, for removing a railroad spur track in Oregon. The U. S. Engineer Office, Albuquerque, N. M., has awarded a contract in amount less than $100,000 to Denison and Shotwell, Albuquerque, for the grading for roads and railroad construction in New Mexico, and this office has also awarded a contract in amount less than $50,000 to Lew Spencer, Alpine, Tex., for the construction of railroad track in Texas. The U. S. Engineer Office, Jacksonville, Fla., has awarded two contracts both in amount less than $50,000 as follows; to the Georgia & Florida Railroad for the construction of a spur track in Georgia, and to John R. Powell, Ft. Myers, Fla., for the construction of a spur track in Florida. Other contracts recently awarded, all of which are in amount less than $50,000, are as follows: The U. S. Engineer Office, Little Rock, Ark., to the D. F. Jones Construction Company, Inc., Little Rock, for the construction of an access railroad in Arkansas; the U. S. Engineer Office, Omaha, Neb., to Harry Noel, Spencer, Iowa, for the construction of a railroad spur in Nebraska; and the Wright Field, Dayton, Ohio, to the Erie for the construction of a railroad siding.

Financial

ALABAMA GREAT SOUTHERN.—*Plans New Financing.*—A special meeting of the stockholders of the Alabama Great Southern to be held at Birmingham, Ala., on October 23 has been called to consider the issuance of $15,000,000 of new first mortgage bonds to be dated November 1, 1942. Of the total, $9,500,000 of 25-year 3¼ per cent bonds, series A, are to be issued immediately to pay or acquire on or before maturity the company's first consolidated mortgage bonds amounting to $9,518,000 which mature December 1, 1943. Funds necessary to retire these bonds not obtained from the sale of the $9,500,000 series A bonds will be supplied from treasury cash.

ATLANTIC COAST LINE.—*Reduces Debt.*—Directors of the Atlantic Coast Line on September 17 authorized the calling for redemption on December 15 of all ten-year collateral trust 5 per cent notes due May 1, 1945, now outstanding in the aggregate principal amount of $11,317,000, at 102 plus accrued interest to December.

BALTIMORE & OHIO.—*Abandonment by the Valley.*—The Valley has been authorized by Division 4 of the Interstate Commerce Commission to abandon that part of its line extending from Staunton, Va., to a connection with the Chesapeake & Ohio at Lexington, 35.4 miles. At the same time the Baltimore & Ohio was authorized to abandon operation over the Valley's line and over the line of the C. & O. from valuation station 3175 plus 25.5 to East Lexington, Va., 1.5 miles.

In the same decision the Chesapeake & Ohio was authorized to acquire from the Valley and operate over 1.9 miles of tracks near Lexington, Va., and East Lexington.

BOSTON & ALBANY.—*To Redeem Bond Issue.*—The Boston & Albany has called for redemption on October 1, 1942, all of its outstanding $9,000,000 of main line first mortgage 4½ per cent series A bonds, due April 1, 1943, at face value plus accrued interest to October 1.

CALIFORNIA WESTERN RAILROAD & NAVIGATION.—*Deficit Status.*—Examiner Homer H. Kirby has recommended in a proposed report that Division 4 of the Interstate Commerce Commission find that this company is not entitled to benefit under section 204 of the Transportation Act of 1920, as amended January 7, 1941, for any losses which it may have incurred as a result of private operation during the federal control period and that the carrier's claim should be dismissed.

CENTRAL OF GEORGIA.—*Salary of Trustee.*—The Interstate Commerce Commission has refused to reconsider its recent decision in which it fixed the maximum salary of Merrel P. Callaway, trustee of this company during reorganization proceedings under section 77 of the Bankruptcy Act, at the rate of $20,000 a year.

CHICAGO, ATTICA & SOUTHERN.—*Abandonment.*—This railroad has asked the District Court at South Bend, Ind., for permission to cease operations and dispose of its metal properties for war use. The railroad has been in receivership since August 5, 1931.

CHICAGO & NORTH WESTERN.—*Abandonment.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon a line extending from the end of the line southeasterly through Embarrass, Wis., to milepost C-1, 5.3 miles.

FLORIDA EAST COAST.—*Abandonment.*—This company has asked the Interstate Commerce Commission for authority to abandon its San Mateo branch extending from San Mateo Junction, Fla., to San Mateo, 2.8 miles.

LOUISVILLE & NASHVILLE.—*Abandonment.*—This company has asked the Interstate Commerce Commission for authority to abandon the following lines:

1. The South branch extending from Graces, Ala., to the end of the branch at Redding, 2.8 miles;
2. The Reinecke branch extending from Madisonville, Ky., to Como, 1.8 miles; and
3. The Danger Fork branch extending from valuation station 241 plus 78 to valuation station 296 plus 31, in Perry County, Ky., 5,453 ft.

MISSOURI PACIFIC.—*Acquisition.*—This company has asked the Interstate Commerce Commission for authority to acquire a part of the Chicago & North Western's abandoned Hastings branch, 1.6 miles, in Adams County, Nebr.

NORTHERN PACIFIC.—*Abandonment.*—This company has asked the Interstate Commerce Commission for authority to abandon its Fairfax branch extending from San Rafael, Calif., to the end of the branch at Fairfax, 3.9 miles.

PACIFIC COAST.—*Abandonment.*—This company has been denied authority by Division 4 of the Interstate Commerce Commission to abandon its Taylor branch extending from Maple Valley, Wash., to the end of the track at Taylor, 8.7 miles. The denial was without prejudice to a renewal

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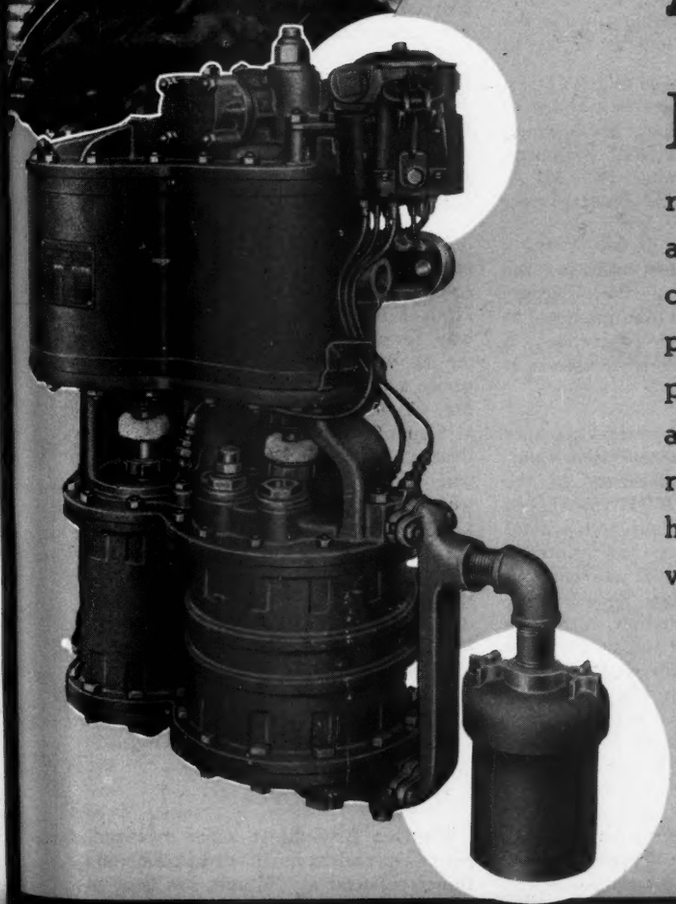
HEAVIER, *Faster*, TRAFFIC Demands



Maximum Reliability of AIR COMPRESSORS

FASTER, more frequent movement of heavy freight trains is taxing motive power capacity of the railroads today, when the greatest measure of locomotive availability is imperative . . . Such intensive operating conditions impose more rigorous service on air compressors, which are better able to stand the gaff when properly lubricated and kept free of dirt . . . Our mechanical lubricator and inlet filter do the trick. They insure reliable performance day after day. Their protection helps to minimize annoying and expensive delays. As preventive insurance they save their cost many times over.

Railroads now using these devices find that the time between compressor removals for maintenance can be greatly lengthened — as much as three to six times Many have eliminated laundering operations. Performance has remained consistently reliable Think what this might mean to YOU as a definite help toward continuity of modern train service. » » » »

WESTINGHOUSE AIR BRAKE CO.

WILMERDING, PENNSYLVANIA

of the application at the end of the present calendar year.

READING.—*R. B. White Elected Chairman.*—R. B. White, president of the Baltimore & Ohio, has been elected a director and chairman of the board of the Reading, to fill the vacancy caused by the death of Daniel Willard, former chairman of the B. & O.

ST. LOUIS-SOUTHWESTERN.—*Reorganization.*—The Anti-trust division of the Department of Justice has petitioned the District Court at St. Louis, Mo., for permission to intervene in the reorganization of this railroad, contending that acceptance of the proposed reorganization plan might "seriously impede the enforcement of the anti-trust laws in the transportation field." The petition charges that the reorganization plan is "unfair and unequitable in that it fails to subordinate the claims of the Southern Pacific to the claims of other security holders because of its refusal to let the Cotton Belt sue the Kansas City Southern and others responsible for the Kansas City Southern's control of the debtor in violation of the anti-trust laws."

SOUTHERN.—*Resumes Preferred Dividends.*—The Southern resumed dividends on its non-cumulative $5 preferred stock with the declaration on September 22 of a dividend of $1.25 per share payable November 2.

SOUTHERN PACIFIC.—*Abandonment.*—This company has been granted authority by Division 4 of the Interstate Commerce Commission to abandon that portion of the so-called Redlands branch extending in a northeasterly direction from Crafton, Calif., to the end of the branch at Greenspot, 1.8 miles.

UNION PACIFIC.—*Abandonment by the Los Angeles & Salt Lake.*—Acting at these companies' requests, Division 4 of the Interstate Commerce Commission has dismissed without prejudice their applications for authority to abandon the following lines of railroad:

1. From Cutler, Utah, to Five Mile Pass, and
2. From Delta, Utah, to Fillmore.

WABASH.—*New Board Elected.*—At the adjourned annual meeting of the stockholders of the Wabash held September 22 at St. Louis, Mo., the following directors were elected to the board of the newly reorganized company. W. Warren Humphrey, Edward D. Stair, Augustus E. Staley, Jr., Arthur K. Atkinson, Nat S. Brown, Pierpont V. Davis, Walter S. Franklin, Allen P. Green, James L. Homire, Frank C. Nicodemus, Jr., Norman B. Pitcairn, J. Leonard Replogle, A. Wessel Shapleigh, George H. Sido and Henry Rogers Winthrop.

WESTERN MARYLAND.—*Abandonment.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon a branch line extending from Keyster Junction, Md., to the end of the branch at Keyster, W. Va., 0.4 mile.

Average Prices Stocks and Bonds

	Sept. 22	Last week	Last year
Average price of 20 representative railway stocks..	27.99	27.58	29.74
Average price of 20 representative railway bonds..	68.03	67.38	63.55

Dividends Declared

Atlantic Coast Line.—5 Per Cent Non-cumulative Preferred, $2.50, semi-annually, payable November 10 to holders of record October 23.

Joliet & Chicago.—Stamped, $1.75, quarterly, payable October 5 to holders of record September 23.

New London Northern.—$1.75, quarterly, payable October 1 to holders of record September 15.

Norwich & Worcester.—8 Per Cent Preferred, $2.00, payable October 1 to holders of record September 15. (Payment subject to receipt of funds from New York, New Haven & Hartford.)

Philadelphia & Trenton.—$2.50, quarterly, payable October 10 to holders of record October 1.

Reading.—25¢, quarterly, payable November 12 to holders of record October 15.

Sharon Railway.—Irregular, 87½¢, payable October 1 to holders of record September 19.

Southern.—M. & O. Stock Trust Certificates, $2.00, semi-annually, payable October 1 to holders of record September 15.

Southern.—Preferred, $1.25, payable November 2 to holders of record October 15.

Wilton Railroad.—$1.75, semi-annually, payable October 1 to holders of record September 17.

Railway Officers

EXECUTIVE

J. M. Fields, assistant to vice-president of the Atlantic Coast Line, has been promoted to assistant vice-president, traffic department, with headquarters as before at Wilmington, N. C.

E. J. Halberg, vice-president and general counsel of the Pittsburg & Shawmut, has been elected president, with headquarters as before at Kittanning, Pa. **M. A. Crawford** has been elected general counsel at Kittanning.

S. L. Kartheiser, chief clerk of the mechanical department of the Chicago, Burlington & Quincy, has been promoted to assistant to vice-president (operation), a newly created position with headquarters at Chicago.

Raymond H. Palmer, general manager of the New England Transportation Company (bus and truck subsidiary of the New York, New Haven & Hartford), has been appointed vice-president and general manager, with headquarters as before at Boston, Mass. Mr. Palmer was born on September 19, 1889, at East Sumner, Me., and began his transportation career in 1905 as telegraph operator and station agent of the Maine Central at Hartford, Me. He joined the New York, New Haven & Hartford at Boston in April, 1910, as a clerk in the accounting department and in 1914 he was appointed express accountant. Four years later he became auditor of the Boston Terminal Company and the Union Freight Railroad Company, as well as local auditor for the New Haven. When the New England Transportation Company began operations in 1925, Mr. Palmer was appointed auditor, which position he held until May, 1934, when he became general manager in charge of operations, and also a director. On September 1, 1937, he was given supervision of the passenger traffic, mechanical, operating and stores departments.

OPERATING

J. E. Brownlie, assistant superintendent of the Louisville & Nashville at Birmingham, Ala., has retired. Mr. Brownlie was succeeded by **F. W. Stopinski,** as reported in the *Railway Age* of September 12.

H. H. Tisdale, assistant to the general manager of the Atchison, Topeka & Santa Fe at Los Angeles, Cal., has temporarily assumed the duties of superintendent of the Los Angeles division because of the illness of **Vance H. Wilson.**

J. P. Kelley, trainmaster of the Texas & Pacific at Texarkana, Tex., has been transferred to Alexandria, La. The territory of **D. Flanigan,** trainmaster at Mineola, Tex., has been extended to include the Bonham and Texarkana subdivisions and the position of trainmaster at Texarkana has been abolished.

Corbett W. Coil, assistant superintendent of the Lake Superior division of the Northern Pacific, with headquarters at Duluth, Minn., has been transferred to the Idaho division, with headquarters at Spokane, Wash., succeeding **Robert E. Mattson,** who has been granted a leave of absence for military service. **C. T. Sponsel,** superintendent of the Yellowstone division at Glendive, Mont., has been appointed assistant superintendent at Duluth, relieving Mr. Coil, and **W. D. Pearce,** former superintendent of the Yellowstone division, who has been on a leave of absence because of illness, has returned to that position, replacing Mr. Sponsel.

T. P. Crymes, trainmaster of the Illinois Central at Memphis, Tenn., has been commissioned a lieutenant-colonel of the 715th Engineer Battalion, Military Railway Service, and **T. R. Beach,** trainmaster at Mattoon, Ill., has been commissioned a major of the same battalion. Both Mr. Crymes and Mr. Beach are stationed at Camp Claiborne, La., awaiting the activation of the 715th (an Illinois Central unit of the Military Railway Service) which is expected to take place in the near future. **Walter McLaurin,** assistant trainmaster at Greenville, Miss., has been advanced to trainmaster at Memphis, succeeding Mr. Crymes, and **A. H. Ganong,** assistant trainmaster at Jackson, Miss., has been promoted to trainmaster at Mattoon, relieving Mr. Beach. **W. B. Healy,** night yardmaster at East St. Louis, Ill., has been advanced to trainmaster at that point, a newly created position.

TRAFFIC

Charles A. Sublett, office manager of the vice-president in charge of traffic of the Illinois Central at Chicago, has been promoted to assistant general freight agent, with the same headquarters, succeeding **Rudolph G. Raasch,** whose election as

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SAVE MATERIALS

EVERY locomotive part for which HUNT-SPILLER *Air Furnace* GUN IRON is being specified, is subjected to severe frictional wear or high superheat temperatures.

The long service life of these parts is contributing greatly to the material conservation program of the American railroads.

To insure the highest standards of service and economy standardize on all the HSGI Parts listed below.

HSGI
Reg. U.S. Trade Mark
Cylinder Bushings
Cylinder Packing Rings
Pistons or Piston Bull Rings
Valve Bushings
Valve Packing Rings
Valve Bull Rings
Crosshead Shoes
Hub Liners
Shoes and Wedges
Floating Rod Bushings
Finished Parts
Dunbar Sectional Type Packing
Duplex Sectional Type Packing
for Cylinders and Valves
(Duplex Springs for Above
Sectional Packing)
Cylinder Snap Rings
Valve Rings All Shapes
Light Weight Valves
Cylinder Liners and Pistons
for Diesel Service

HUNT-SPILLER MFG. CORPORATION
V. W. Ellet, *President* — E. J. Fuller, *Vice-Pres. & Gen. Mgr.*

383 Dorchester Ave. *Office & Works* South Boston, Mass.
Canadian Representative: Joseph Robb & Co., Ltd., 5575 Cote St. Paul Rd., Montreal, P. Q.
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HUNT-SPILLER GUN IRON
Air Furnace

chairman of the Illinois Freight Association was reported in the *Railway Age* of September 5. **Arthur A. Koch,** office manager of the general freight office at Chicago, has also been advanced to assistant general freight agent, with the same headquarters.

George A. Dansberry has been appointed district freight agent of the Southern at Kingsport, Tenn., a newly created position.

Carl H. Kent, export and import agent of the Canadian National Steamships at New York, has been promoted to foreign freight agent of the Canadian National Railways at New York, succeeding **H. S. Head,** retired.

William F. Vail has been appointed assistant freight traffic manager-solicitation, of the New York, Ontario & Western, with headquarters at New York. Mr. Vail was born on May 6, 1895, at Dunellen, N. J., and entered railroad service as a clerk in the Dunellen freight office of the Central of New Jersey in 1912. He was promoted to chief rate clerk at Elizabethport, N. J.,

William F. Vail

and resigned on July 1, 1917, to become traveling freight agent of the Western Maryland at New York. From November 19, 1917, to July, 1919, Mr. Vail served with the United States Army. On return from overseas, Mr. Vail was temporarily employed by the Central of New Jersey, and returned to the New York office of the Western Maryland upon termination of federal control on March 1, 1920. He was promoted to commercial coal agent in April, 1922, and to commercial freight agent in November, 1923. On March 15, 1924, he became traveling freight and passenger agent of the Wabash at New York, being transferred to Philadelphia on April 1, 1937, serving as acting general agent there for several months.

T. V. Helmcamp, division freight agent of the Chicago, Rock Island & Pacific at Amarillo, Tex., has been promoted to general agent, freight department, at El Paso, Tex., succeeding **S. L. Lewis,** who has been transferred to San Antonio, Tex., replacing **R. W. Sager,** who has been transferred to Houston, Tex., as reported in the *Railway Age* of August 15. **H. N. Lile,** district freight agent at Santa Barbara, Cal., has been appointed general agent at San Francisco, Cal., a newly created position. **H. C. McMaster,** district freight representative at Los Angeles, Cal., has been promoted to general agent at that point.

W. J. Elliott, western traffic manager of the Great Lakes Transit Corporation, whose boats have been taken over by the federal government, has been appointed special representative of the traffic department of the Minneapolis & St. Louis.

Harry T. Worthley, general agent of the Missouri & Arkansas at Shreveport, La., has been appointed general agent at Tulsa, Okla., succeeding **Jerry Murray,** assistant general freight agent, who has been granted a leave of absence for military service.

ENGINEERING & SIGNALLING

F. W. Armistead, division engineer of the Illinois Central at Clinton, Ill., who was assigned to other duties because of illness, as reported in the *Railway Age* of June 6, retired on August 1.

W. R. Bennett, division engineer of the Ann Arbor, with headquarters at Owosso, Mich., has resigned to accept a position with the U. S. Engineers. As reported in the *Railway Age* of September 12, Mr. Bennett has been succeeded by **V. R. Hayes.**

R. S. Stephens, supervisor of work equipment of the Wabash, with headquarters at Decatur, Ill., has been appointed division engineer at that point, succeeding **Charles T. Warren,** whose promotion to engineer of track, with headquarters at St. Louis, Mo., was reported in the *Railway Age* of September 12.

MECHANICAL

Milton C. Prentiss, whose appointment as engineer of motive power of the New York, Ontario & Western at Middletown,

Milton C. Prentiss

N. Y., was reported in the *Railway Age* of July 25, was born on May 27, 1900, at Greenville, Me. Mr. Prentiss received his bachelor of science degree in mechanical engineering from the University of Maine in 1923 and entered railroad service on September 21, 1924, with the New York, New Haven & Hartford, serving as special apprentice and mechanical inspector at the Readville locomotive shops. He then became enginehouse foreman and traveling locomotive inspector, successively, for the Boston & Maine, leaving that road to go with the planning department, Railway division, Edward G. Budd Manufacturing Company. Mr. Prentiss then went with the Baldwin Locomotive Works in the materials department, subsequently becoming factory engineer for the Philco Radio & Television Company. Mr. Prentiss then became sales engineer for the Gulf Oil Corporation.

SPECIAL

Effective September 1, the development department of the Kansas City Southern has been placed under the jurisdiction of **A. N. Reece,** assistant to the president, with headquarters at Kansas City, Mo. **E. D. Wilson,** general development agent, has been granted a leave of absence.

OBITUARY

C. B. Foster, who retired in June, 1937, as passenger traffic manager of the Canadian Pacific at Montreal, Que., died on September 13 at the age of 72.

James Humphrey Hustis, Sr., former vice-president of the New York Central system at New York, died of a heart attack on September 18 at White Plains hospital, New York, at the age of 78. Mr. Hustis was born at New York on July 11, 1864, and entered railroad service on July 22, 1878, with the New York Central & Hudson River (now New York Central), serving successively as office boy, clerk, chief clerk, trainmaster and assistant superintendent. On November 1, 1900, he became superintendent of the River division of the West Shore (New York Central), being transferred to the Watertown & Ogdensburg division on August 21, 1902, and later to the Hudson, Putnam and Electric divisions. On March 14, 1907, Mr. Hustis became general superintendent of the Western district of the West Shore and on October 1, 1907, he was appointed assistant general manager of the New York Central & Hudson River. On May 31, 1911, he became vice-president of the New York Central, in charge of the Boston & Albany. On September 1, 1913, he became vice-president of the New York, New Haven & Hartford and on October 22, 1913, he was elected president of that road. On August 15, 1914, Mr. Hustis was elected president of the Boston & Maine and from August 29, 1916, to May 4, 1925, he was temporary receiver of the Boston & Maine. From January 5, 1927, to January 4, 1929, he was president of the Schenectady railways (owned jointly by the New York Central and Delaware & Hudson). From April 29, 1929, to January 31, 1934, Mr. Hustis was arbitrator in several Short Line railroad cases for the New York Central. From October, 1929, to January 31, 1934, he was vice-president of the New York Central, retiring on the latter date.

CONSERVE STEEL
For Our Fighting Forces

Foresighted management now is doing everything possible to conserve the steel already in service, making it last so that all new steel can go into America's war effort.

Preventing corrosive destruction is one effective way to conserve steel and help fight the war on the home front. The initial step is to critically examine all buildings and equipment—bridges, columns, trusses, floors, stairs, roofing, siding, ventilators, ducts, piping, tanks, fences, cranes, machinery, etc.—everything made of steel that is subject to corrosion from dampness, the weather or process fumes.

Paint manufacturers can offer good advice on effective methods of cleaning, and on primer and finish coats that will protect and conserve steel in and about your plant. A program to preserve steel has a valuable secondary advantage, too. Many shades of paint reflect light, and better lighting cuts spoilage, speeds production and reduces the hazards of accidents to America's war workers.

A conservation program more than pays for itself in lower maintenance and replacement costs, but more important now, every pound of steel that is saved is a boost to the war effort.

SHEETS · STRIP · TIN PLATE · BARS · PLATES · FLOOR PLATE · STRUCTURALS · PILING
RAILS · TRACK ACCESSORIES · REINFORCING BARS

Dedicated to Victory

INLAND STEEL CO.

38 S. Dearborn Street, Chicago • Sales Offices: Milwaukee, Detroit, St. Paul, St. Louis, Kansas City

FOR VICTORY TODAY AND SOUND BUSINESS TOMORROW

Get This Flag Flying Now!

This War Savings Flag which flies today over companies, large and small, all across the land means *business.* It means, first, that 10% of the company's gross pay roll is being invested in War Bonds by the workers voluntarily.

It also means that the employees of all these companies are doing their part for Victory . . . by helping to buy the guns, tanks, and planes that America and her allies *must* have to win.

It means that billions of dollars are being diverted from "bidding" for the constantly shrinking stock of goods available, thus putting a brake on inflation. And it means that billions of dollars will be held in readiness for post-war readjustment.

Think what 10% of the national income, saved in War Bonds now, month after month, can buy when the war ends!

For Victory today . . . and prosperity *tomorrow,* keep the War Bond Pay-roll Savings Plan rolling in *your* firm. Get that flag flying now! Your State War Savings Staff Administrator will gladly explain how you may do so.

If your firm has not already installed the Payroll Savings Plan, *now is the time to do so.* For full details, plus samples of result-getting literature and promotional helps, write or wire: War Savings Staff, Section F, Treasury Department, 709 Twelfth Street NW., Washington, D. C.

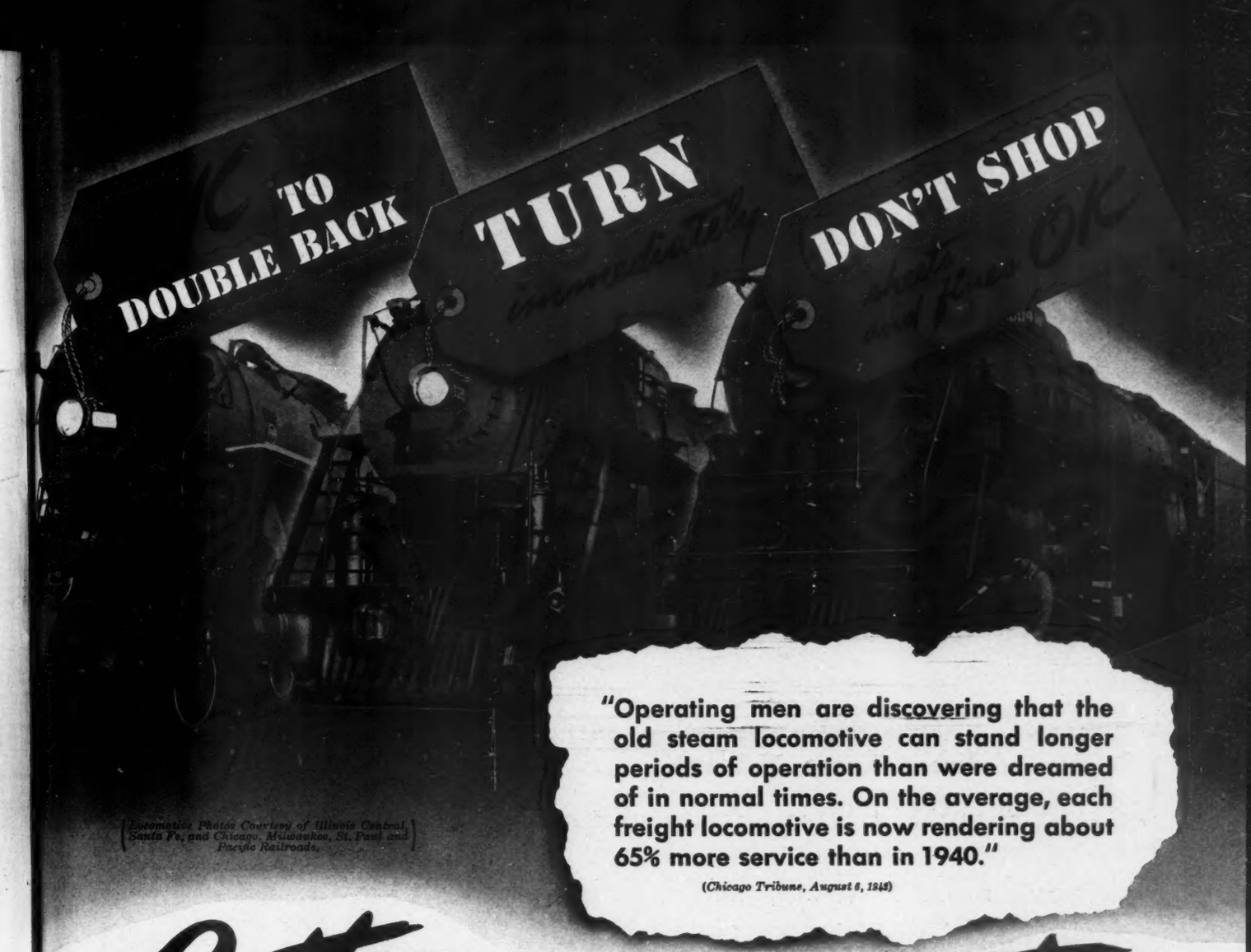
EVERYBODY EVERY PAYDAY AT LEAST 10%

Save With

War Savings Bonds

This Space Is a Contribution to America's All-Out War Program by

RAILWAY AGE



[Locomotive Photos Courtesy of Illinois Central, Santa Fe, and Chicago, Milwaukee, St. Paul and Pacific Railroads.]

"Operating men are discovering that the old steam locomotive can stand longer periods of operation than were dreamed of in normal times. On the average, each freight locomotive is now rendering about 65% more service than in 1940."

(Chicago Tribune, August 8, 1943)

Better Water Treatment...

ACCOUNTS FOR MUCH OF THE INCREASED SERVICE BETWEEN SHOPPINGS

How to move more men and materials with existing locomotives is a problem. Operating men are discovering that the capacity for much greater efficiency in the locomotives they already have lies in proper treatment of the boiler water. Bagged flues, blistered sheets, leaky flues and bolts, and flue and fire box renewals, due to the use of bad water or improperly treated water, cannot be tolerated. Better water treatment . . . Dearborn Water Treatment to be specific . . . conditions water so that immediate turning and doubling back are general practice. Over 200 railroads are benefiting by using this service.

The recent announcement of a Dearborn Anti-Foam that is substantially non-saponifiable and non-hydrolyzable is the latest contribution toward greater locomotive efficiency. The Dearborn Engineer in your territory is equipped to demonstrate this new anti-foam and explain its numerous advantages. He will be glad to work with you and help you to solve all of your water problems, enabling you to set new endurance records for your present locomotives.

DEARBORN CHEMICAL COMPANY

310 S. Michigan Ave., Chicago
205 E. 42nd St., New York
807-15 Mateo St., Los Angeles
2454 Dundas St., West, Toronto

Dearborn

TRADE MARK REGISTERED

SCIENTIFIC WATER TREATMENT

A 1,000,000 VOLT "CANDID CAMERA"

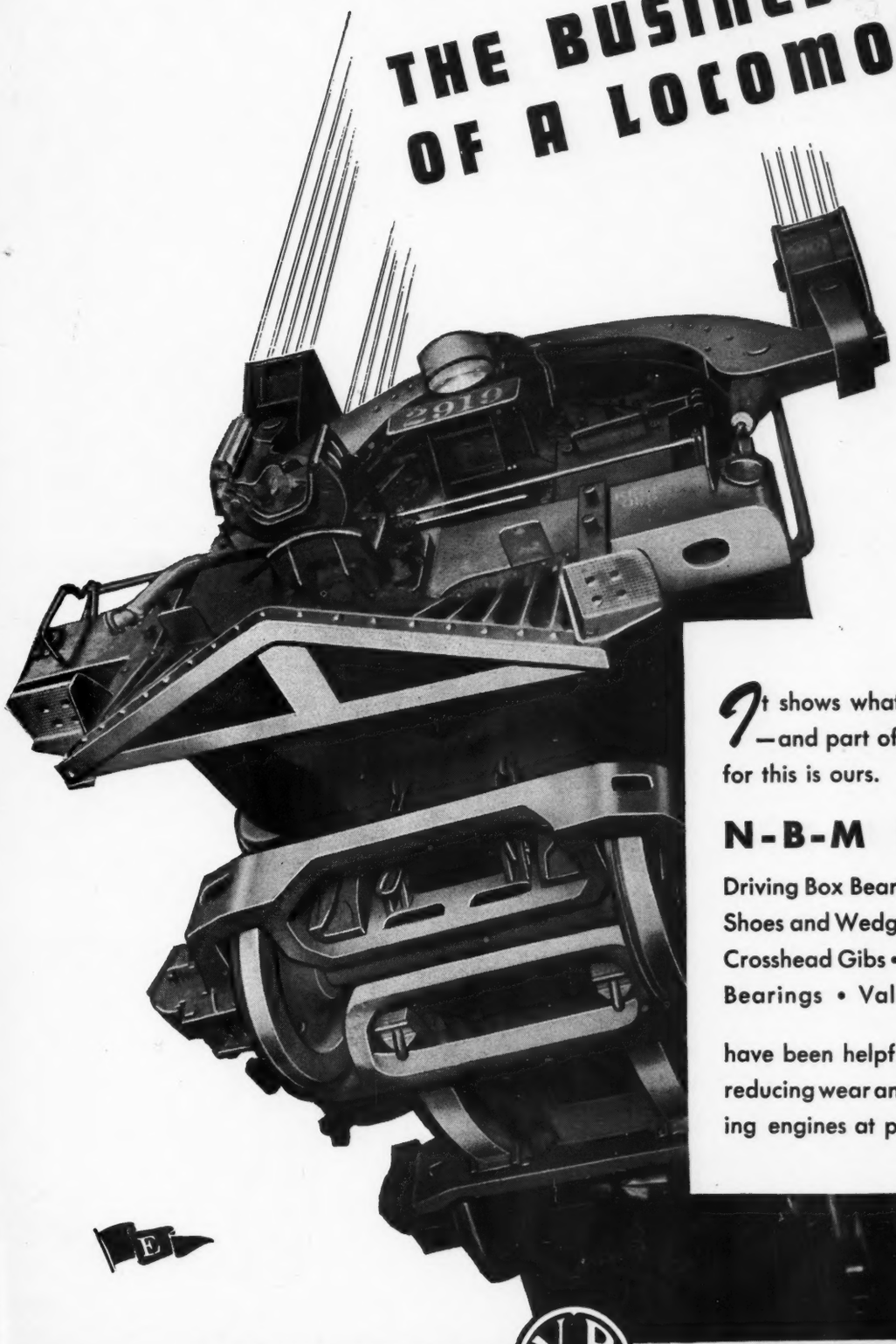
ONE of the largest X-Ray machines ever built has been installed by the American Steel Foundries for use in the production of steel castings. This 1,000,000 volt machine produces photographs that are "candid"—that reveal minute hidden defects, if any exist.

This machine is typical of the progress in research being made by the American Steel Foundries. The developments in steel castings now being made to meet the high standards of the Army and Navy will be available in the production of railway steel castings when the war is won.

After adjusting this powerful equipment the operator retires through a series of baffle walls (each 18" in thickness) to another room, where the operating switchboard is located.

AMERICAN STEEL FOUNDRIES

THE BUSINESS END OF A LOCOMOTIVE



It shows what makes her "tick"—and part of the responsibility for this is ours.

N-B-M BRONZE

Driving Box Bearings • Hub Plates • Shoes and Wedges • Rod Bushings • Crosshead Gibs • Engine and Truck Bearings • Valve Motion Parts

have been helpful for 68 years in reducing wear and tear and in keeping engines at peak performance.

NATIONAL BEARING
METALS CORPORATION
ST. LOUIS • NEW YORK

KEEP THEM
SYNCHRONIZED

☆ it's vital for victory!

Speed at the lathe . . . and speed on the farm. Speed in the mill . . . and speed in the mine. Now, with the whole nation driving at top speed, the railroads must bear the brunt of moving the most colossal output of munitions any nation ever even attempted to produce!

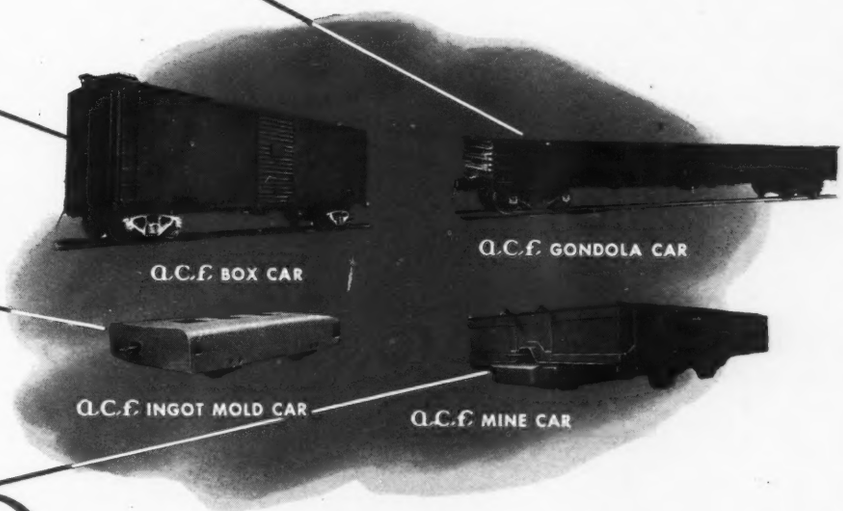
Since June, 1940, freight ton-miles have increased 70%. In World War I; a 12% increase in freight ton-miles brought 72,500 new freight cars to meet it. Yet today a 70% increase — a six-times greater increase — is being currently met with only 87,000 new railroad-owned cars.

This is eloquent testimony to the success with which improved railroad facilities and improved operating methods are now being employed in the effort to get the utmost service out of every piece of rolling stock now on the rails.

The months to come may call for redoubled effort and attention to every detail on the part of every railroad man. They may call for more and more efficient use of cars by shippers and receivers of freight. But, whatever the call, it will be met — for the wheels of the railroads must be kept synchronized with the rising tempo of the wheels of industry!

* * *

For many years the American Car and Foundry Company has served as a principal source of supply to the railroads, and has taken part in many of the most notable advances that have been made in the design and construction of rolling stock. It now offers every facility in its power to aid in making certain that the vital flow of munitions continues ever faster and faster.



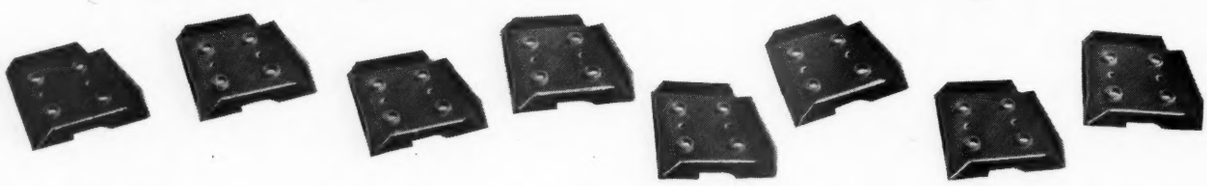
a.c.f.

AMERICAN CAR AND FOUNDRY CO.

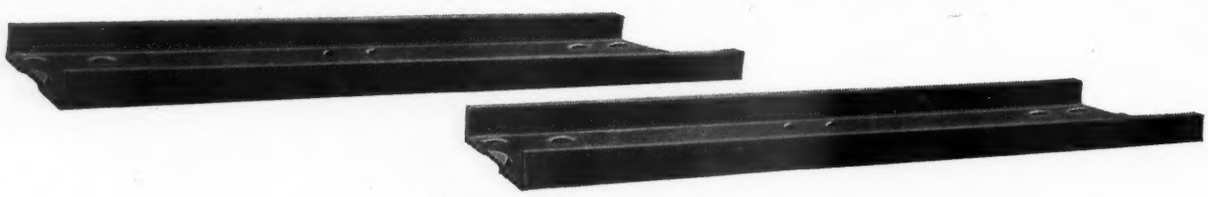
NEW YORK, CHICAGO, ST. LOUIS, CLEVELAND, PHILADELPHIA, PITTSBURGH, ST. PAUL, SAN FRANCISCO

NATIONAL B-1 TRUCKS
with
DUAL CONTROL

Save Weight, Time and Expense



A. A. R. Standard Springs used in National B-1 Trucks are held firmly in position in the side frame, and the Eight spring retaining plates (illustrated above) used in other types of trucks are eliminated.



Two Spring Planks per car are also eliminated—At least 500 lbs. of vital steel per car are saved by elimination of the items shown.

Built-in Friction Controls make the usual snubbers unnecessary.

They meet all A.A.R. requirements.

NATIONAL MALLEABLE AND STEEL CASTINGS CO.
General Offices: CLEVELAND, OHIO
Sales Offices: New York, Philadelphia, Chicago, St. Louis, San Francisco
Works Cleveland, Chicago, Indianapolis, Sharon, Pa., Melrose Park, Ill.

Canadian Representatives: RAILWAY AND POWER ENGINEERING CORPORATION, LTD., *Toronto and Montreal*

NIECES, NEPHEWS AND AIR BRAKES

There's nothing unusual about this combination if you know Bendix-Westinghouse. In one of the Nation's most modern industrial structures, comprising the most advanced methods and equipment, works one big happy family whose watchword is "Keep 'em Rolling!" Around the clock, hundreds of real Americans . . . all nieces and nephews of our own Uncle Sam, build genuine Bendix-Westinghouse Air Brakes and Air Control Equipment ★ Fully aware of the indispensable role Bendix-Westinghouse Equipment plays in the war effort, here's one group who'll be in there pitching until the job is done ★ As you can depend upon Bendix-Westinghouse personnel, no small portion of which inherits a skill which is a natural attribute to second and third generations engaged in the manufacture of devices which must not fail, so can you depend upon genuine Bendix-Westinghouse Air Brakes and Air Control Devices ★ A nation-wide chain of Authorized Distributors carries traditional Bendix-Westinghouse safety, dependability, and economy to you . . . Your telephone directory will give you the address it will pay you to know.

BENDIX-WESTINGHOUSE AUTOMOTIVE AIR BRAKE CO.
ELYRIA, OHIO

AN ORGANIZATION WHOSE UNDIVIDED EFFORT AND COMPLETE RESOURCES
ARE DEVOTED TO YOUR CONVENIENCE AND SAFETY

NEWS from the scrap front

TIPS FROM OTHER "WASTE WARDENS" THAT MAY HELP YOU DO A BETTER JOB OF "GETTING IN THE SCRAP"

★ ★ ★

OLD AXLES MAKE NEW SHAFTS—A Pennsylvania mining company gets top salvage value out of its broken and obsolete locomotive axles by machining them down to make replacement shafts for motors and generators. The turnings make excellent scrap for mill use . . . *Are you making full use of salvaged material to help you solve your parts replacement problems?*

WESTERN ROAD DOUBLES SCRAP IN 1942—By salvaging abandoned tracks, scrapping obsolete equipment, combing inactive stocks, and making every employee a "scrapper", a large western railroad is sending nearly 100% more metal scrap to mills this year than last. Its president recently toured every mile of the line to speed movement of scrap, and he expects 1942 salvage on the road to reach 250,000 tons . . . *Is your scrap campaign geared up to meet war needs?*

VETERAN WEAPONS DRAFTED AGAIN—This old Gatling gun and German "dud" torpedo from World War I were recently volunteered for scrap by a midwest railroad man, along with several smaller weapons. When cut up in the scrap yard, the torpedo yielded over 1000 pounds of steel and the gun about 500 pounds of brass and steel . . . *Are you making all your employees "scrap conscious"?*

THE SCRAP IS COMING IN...*but not fast enough!*

Railroads have always been good "scrappers," but today's urgent need for war materials calls for even better salvage performance. Heretofore, scrap campaigns have been motivated by economy and efficiency. Now you must add another motive—national necessity.

So enlist your personal effort and ingenuity in the scrap drive. Explore new fields of scrap supply—steel binding bands left in cars, rust from steel plates, discarded fence and metal parts from along your right-of-way, belt-drive equipment from ceilings of shops now converted to motor drive, etc. Constantly investigate inactive stocks. Don't miss a trick.

Industry is cooperating in the drive for scrap. But steel mills must get more if they are to meet the gigantic needs of war production. See that your salvage campaign is a continuous clean-sweep!

UNITED STATES

NEBRASKA HITS THE JACKPOT—To stimulate scrap collection throughout Nebraska, an Omaha newspaper sponsored a $2000 contest. Results were amazing. 135 million pounds of scrap was turned in—about 103 pounds per capita—setting a new pace for the nation . . . *Have you tried an incentive system to step up scrap collection on your lines? In communities you serve?*

"PAINLESS EXTRACTION" OF CAR RAILS—This new rail remover can pull up 4000 lineal feet of street car rail a day, its designers say. Besides speeding salvage, it reduces damage to pavement and simplifies repaving. 60,000 tons of rail in New Jersey are being removed with this type of machine . . . *Are communities along your lines equipped to salvage rails economically?*

CAREFUL SORTING INCREASES SCRAP VALUE—An eastern railroad gets maximum value out of its salvaged metals by using the "spread system" of handling scrap. All scrap is delivered to one central depot, where it is sorted by metal experts. About one-third usually is found to have further utility and is held for reconditioning. The other two-thirds is shipped at once for remelting . . . *Are you equipped for thorough classification and quick shipment of your scrap?*

WE "PRACTICE WHAT WE PREACH" — In one of many salvage operations, a U. S. Steel subsidiary recently dismantled for scrap several of its own mill buildings no longer suited to present steel-making practices. The yield was 3500 tons of steel scrap . . . *Do you have any steel structures, idle now and of doubtful future value, which should be scrapped?*

SEGREGATION
is increasingly important!

Wherever possible, sell your scrap in lots that have been carefully segregated, classified and labeled according to their type and metallic make-up. By making it easy for steel mills to identify accurately the alloy content of your machinings and other scrap, you help speed production of war steels and make possible full utilization of critical alloys much of your scrap contains. Scrap that is sorted and prepared will bring you a substantially better price, too.

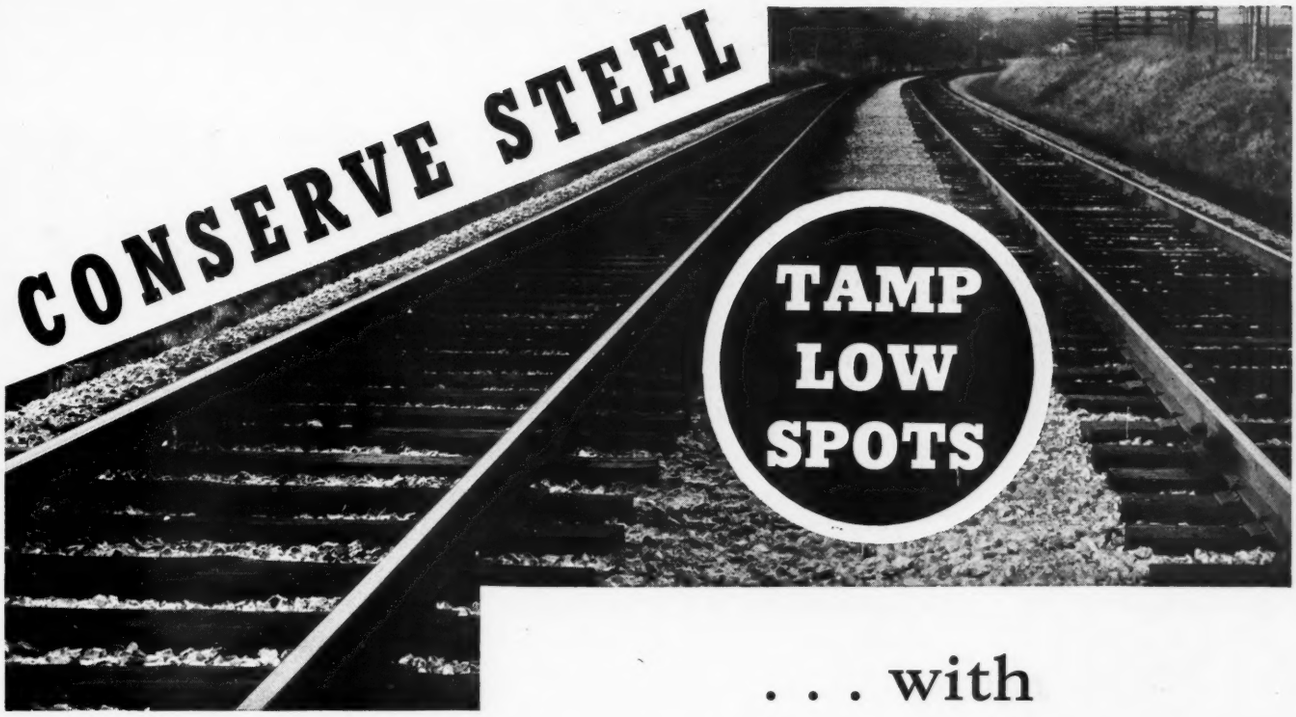
USS

AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York* · CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago* · COLUMBIA STEEL COMPANY, *San Francisco* · NATIONAL TUBE COMPANY, *Pittsburgh* · TENNESSEE COAL, IRON & RAILROAD COMPANY, *Birmingham*

STEEL

COME ON –
AMERICA!
SEND US ··· GUNS
TANKS
SHELLS
JEEPS
SHIPS
SALVAGE
IRON &
STEEL
SCRAP
★
The Colorado Fuel and Iron Corporation
Makers of CF&I RAIL AND FASTENINGS
GENERAL OFFICES: DENVER, COLORADO

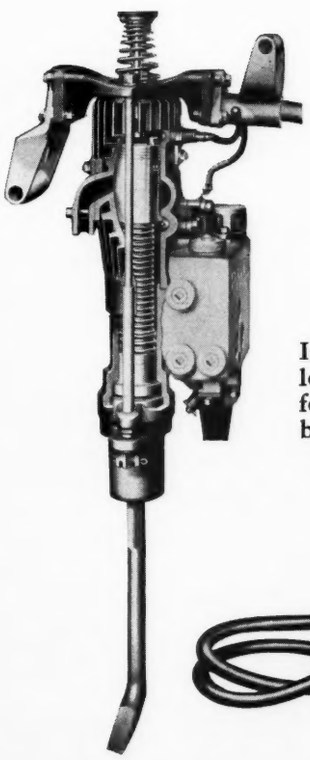
CONSERVE STEEL



. . . with

BARCO UNIT TYTAMPERS!

They do a BETTER JOB Quicker

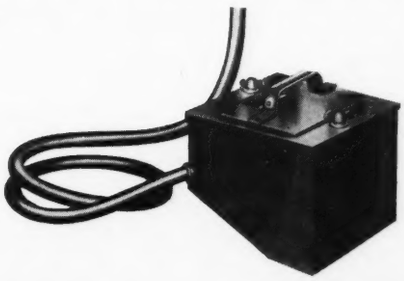


IN OUT OF FACE or SPOT TAMPING
Each Unit is Self-Contained and
Easily Carried by ONE MAN
No Auxiliary Equipment is Needed

NOW 88 RAILROADS USE BARCO

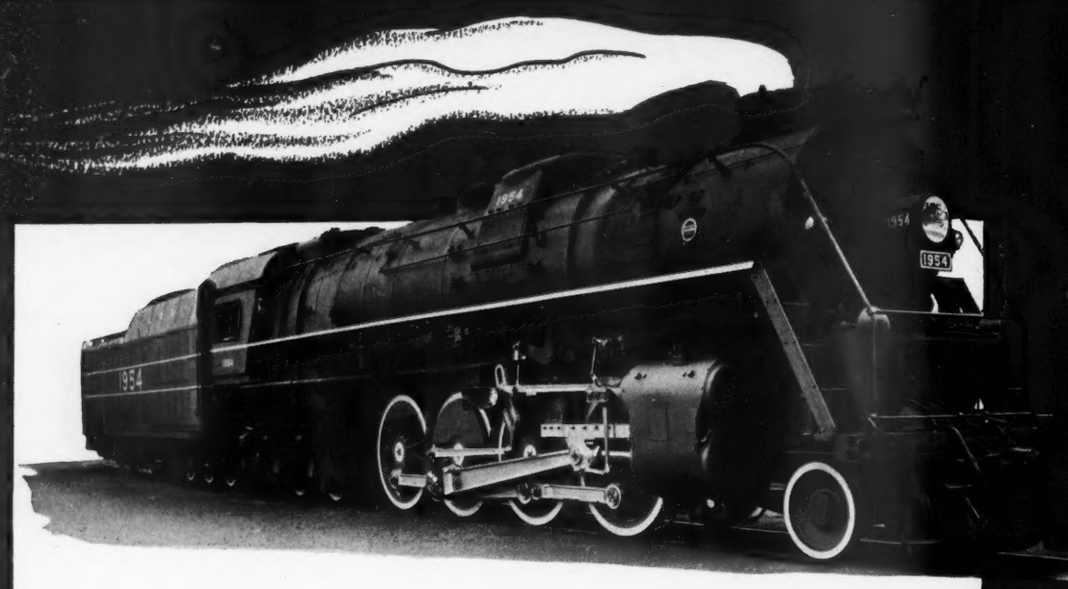
Six Years Satisfactory Service

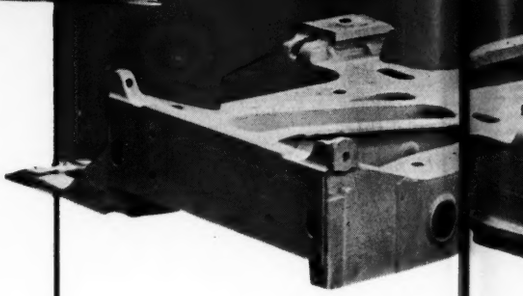
Initial capital expense is lower and year-around performance in tamping, crib busting and ice breaking, add to their efficiency.



Showing Power Plant—costing less than $100.00 and weighing less than 100 lbs. operating group of 12 BARCO Tytampers for out of face tamping.

BARCO MANUFACTURING COMPANY
1800 W. Winnemac Ave. NOT INCORPORATED Chicago, Illinois
In Canada THE HOLDEN COMPANY, LTD.
Montreal — Moncton — Toronto — Winnipeg — Vancouver





14 New, High-Speed

2-8-4's

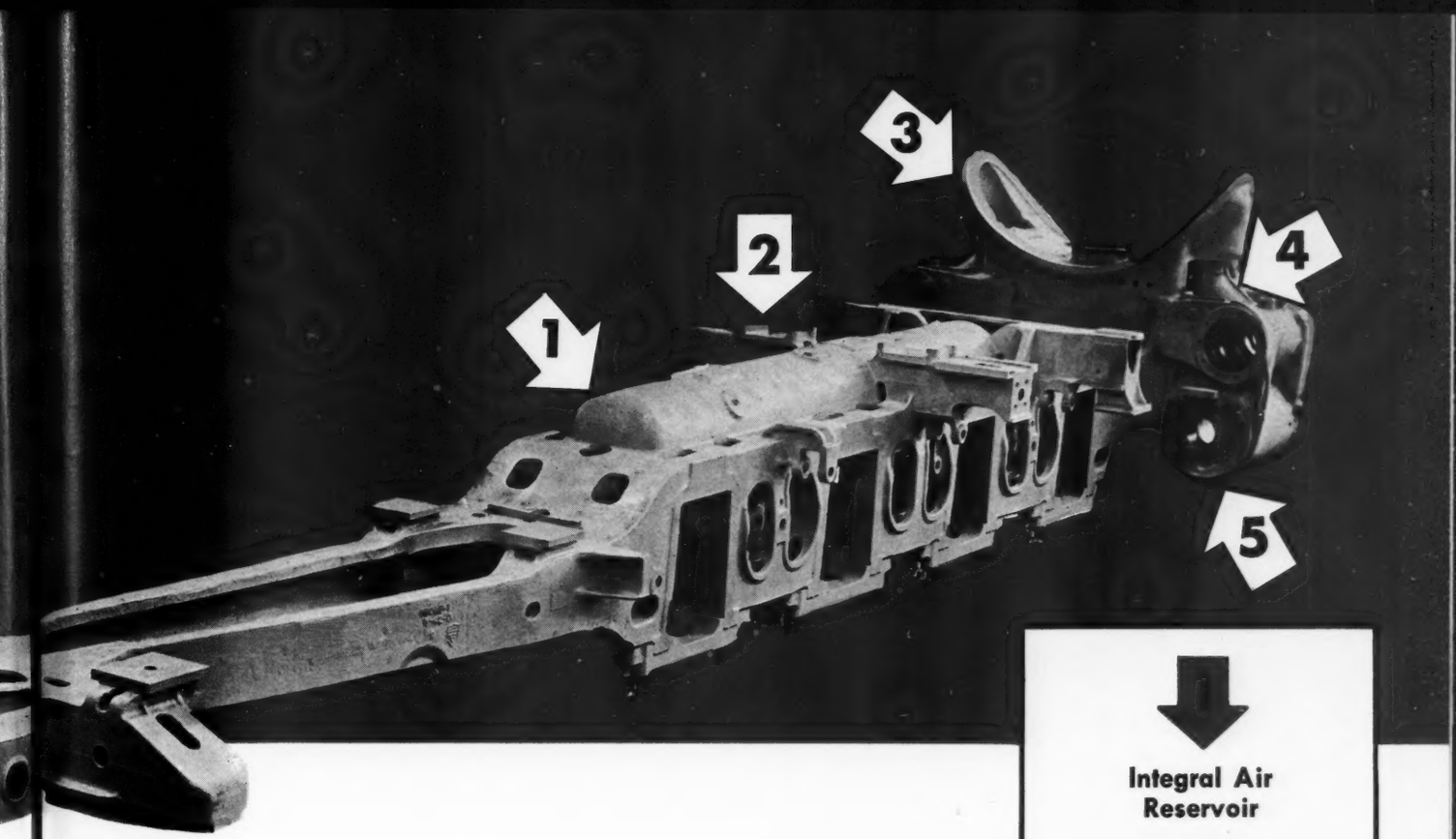
For The

L & N

—Now Being Delivered by Baldwin . . . Are

COMMONWEALTH EQUIPPED

GENERAL STEEL



1 Integral Air Reservoir

2 Sliding Boiler Bearings

3 High Cylinder Saddle

4 Integral Inside Steam Pipe

5 Integral Rear Cylinder Heads

THESE modern 2-8-4 type freight locomotives with 69" drivers are equipped with the following **COMMONWEALTH DEVICES.**

- ✓ **One-Piece Locomotive Beds**
- ✓ **Pilot Frames and Pilot Beams**
- ✓ **2-Wheel Engine Trucks**
- ✓ **4-Wheel Trailer Trucks**
- ✓ **Boxpok Trailer Wheels**
- ✓ **Waterbottom Tender Frames**

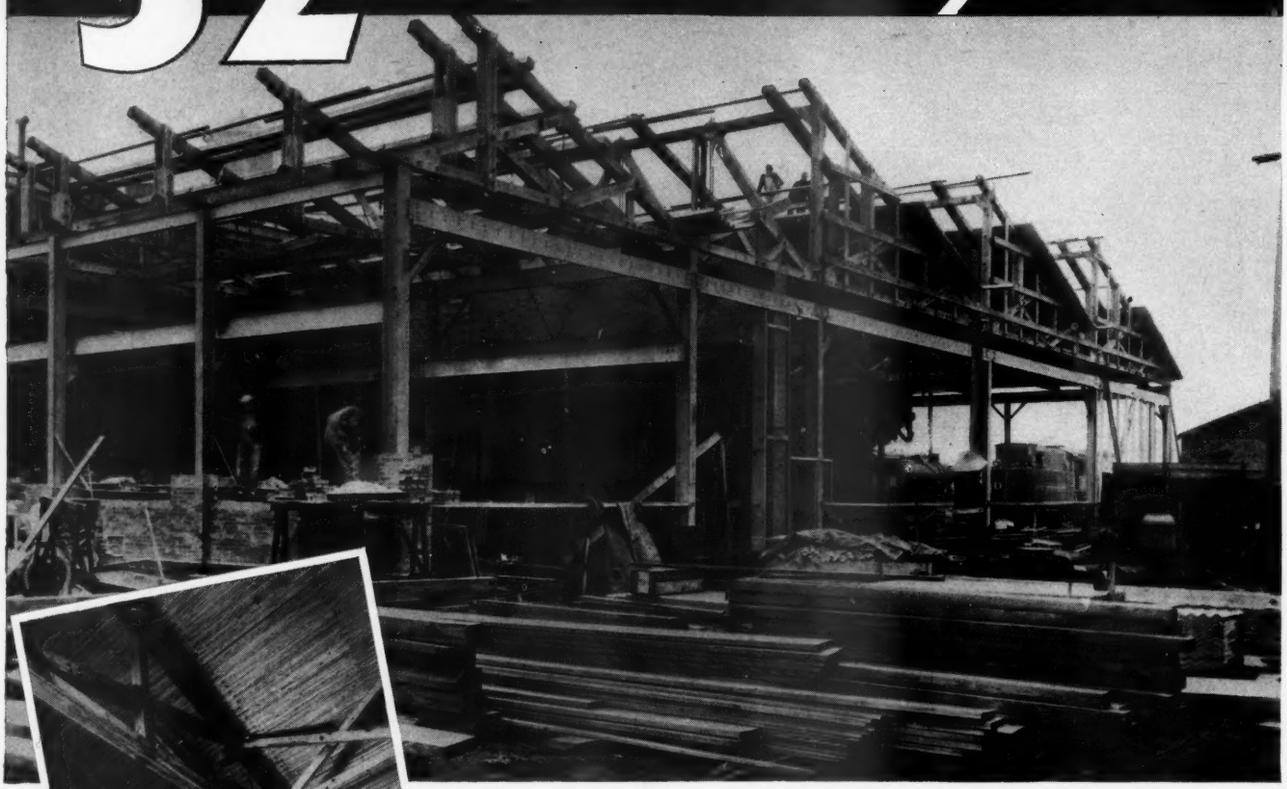
This new, high-speed power will expedite the transportation of vital war materials and freight—help the railroads of America in their tremendous task of moving more tonnage faster than ever before.

COMMONWEALTH Cast Steel Devices assure exceptional strength with minimum weight and eliminate many assembled parts. **COMMONWEALTH** Products have a long, time-tested record of increasing locomotive serviceability and reducing maintenance expense. **POWER THAT IS COMMONWEALTH-EQUIPPED SPENDS MORE TIME ON THE ROAD—LESS TIME IN THE SHOP.**

CASTINGS

EDDYSTONE, PA.
GRANITE CITY, ILL.

52 Railways



Roundhouse of the St. Louis & Ohio R. R. (Alton & Southern). Roof trusses are "WOLMANIZED" Southern Pine, jointed by TECO Ring Connectors. Other railway jobs in which TECO construction has been used include:

OVERHEAD CRANES
TIMBER BENTS
TRESTLES
WAREHOUSES
COAL POCKETS
AUTO LOADING DOCKS
COALING TOWERS

Use TECO Timber Construction

Because of advantages in strength, economy, and long life, the railways of America use timber and TECO Connectors for practically every type of railway structure.

These advantages . . . of more joint strength with less wood and hardware . . . are obvious to those familiar with the TECO System of Timber Construction, which has been largely responsible for the many advances recently made in engineering timber to modern use as a construction material.

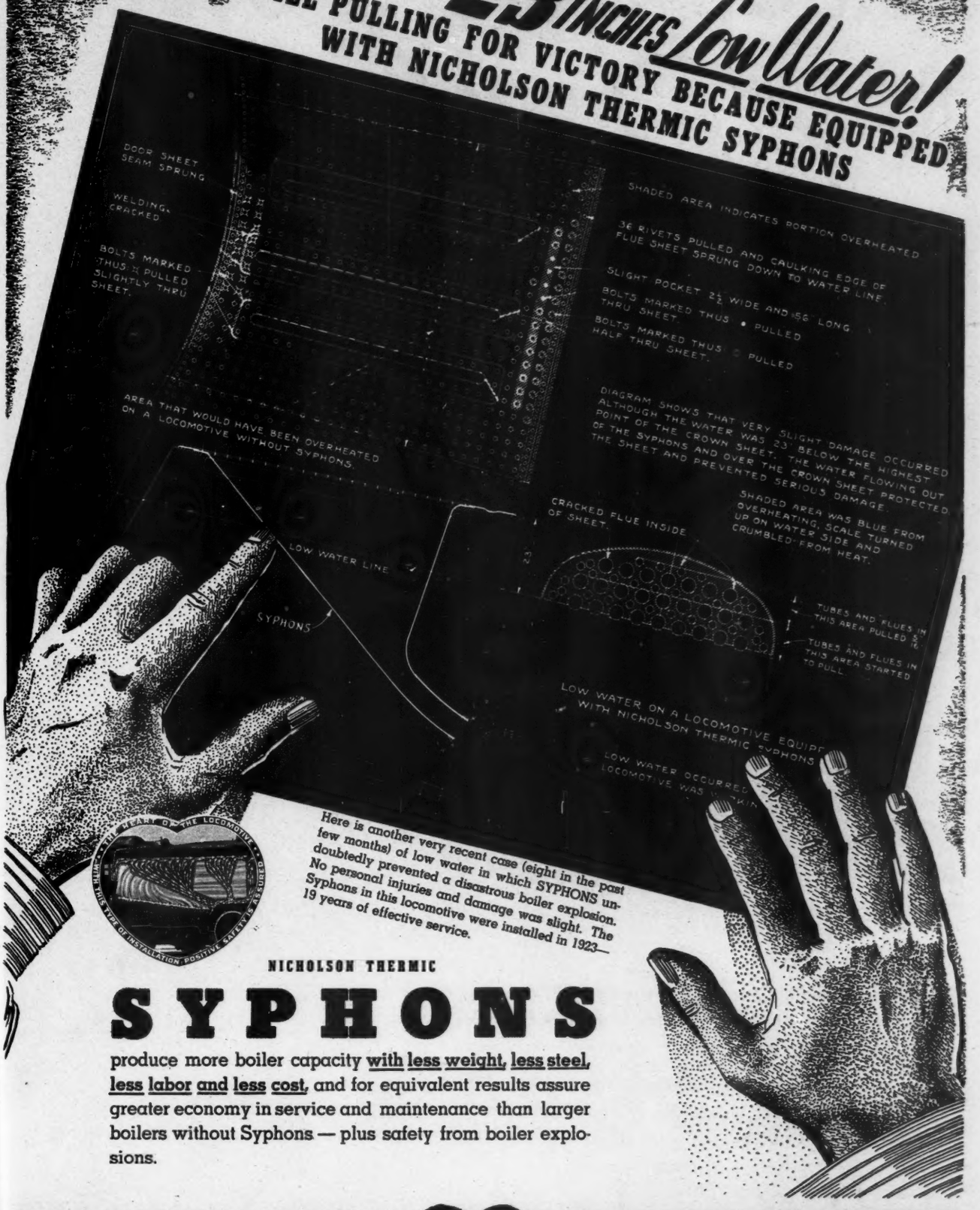
The TECO Ring Connector spreads the load on a timber joint over practically the entire cross-section of the wood . . . brings the full structural strength of lumber into play.

Full details, with case histories of jobs done, will be sent you on request.

Timber ENGINEERING COMPANY
WASHINGTON, D. C. PORTLAND, OREGON

STILL PULLING FOR VICTORY BECAUSE EQUIPPED WITH NICHOLSON THERMIC SYPHONS

23 INCHES Low Water!


DOOR SHEET SEAM SPRUNG
WELDING CRACKED
BOLTS MARKED THUS ✕ PULLED SLIGHTLY THRU SHEET.
AREA THAT WOULD HAVE BEEN OVERHEATED ON A LOCOMOTIVE WITHOUT SYPHONS.
SHADED AREA INDICATES PORTION OVERHEATED
36 RIVETS PULLED AND CAULKING EDGE OF FLUE SHEET SPRUNG DOWN TO WATER LINE.
SLIGHT POCKET 2½ WIDE AND 15/16 LONG
BOLTS MARKED THUS • PULLED THRU SHEET.
BOLTS MARKED THUS ○ PULLED HALF THRU SHEET.
DIAGRAM SHOWS THAT VERY SLIGHT DAMAGE OCCURRED ALTHOUGH THE WATER WAS 23" BELOW THE HIGHEST POINT OF THE CROWN SHEET. THE WATER FLOWING OUT OF THE SYPHONS AND OVER THE CROWN SHEET PROTECTED THE SHEET AND PREVENTED SERIOUS DAMAGE.
SHADED AREA WAS BLUE FROM OVERHEATING, SCALE TURNED UP ON WATER SIDE AND CRUMBLED FROM HEAT.
CRACKED FLUE INSIDE OF SHEET.
LOW WATER LINE
SYPHONS
TUBES AND FLUES IN THIS AREA PULLED
TUBES AND FLUES IN THIS AREA STARTED TO PULL
LOW WATER ON A LOCOMOTIVE EQUIPPED WITH NICHOLSON THERMIC SYPHONS
LOW WATER OCCURRED LOCOMOTIVE WAS

Here is another very recent case (eight in the past few months) of low water in which SYPHONS undoubtedly prevented a disastrous boiler explosion. No personal injuries and damage was slight. The Syphons in this locomotive were installed in 1923—19 years of effective service.

NICHOLSON THERMIC

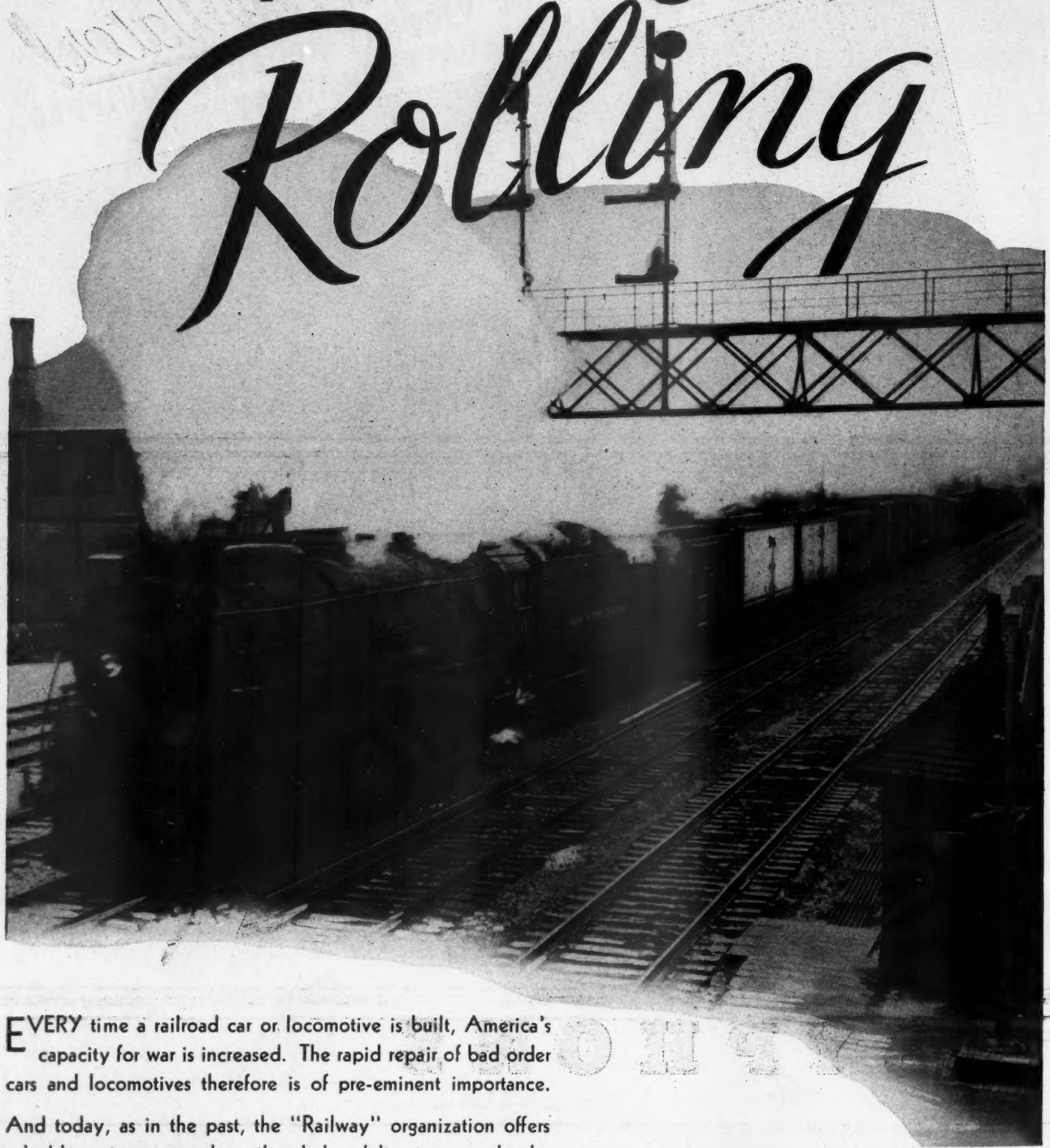
SYPHONS

produce more boiler capacity **with less weight, less steel, less labor and less cost,** and for equivalent results assure greater economy in service and maintenance than larger boilers without Syphons — plus safety from boiler explosions.

Locomotive Firebox Company

NEW YORK CHICAGO MONTREAL

Keep Rolling Stock *Rolling*



EVERY time a railroad car or locomotive is built, America's capacity for war is increased. The rapid repair of bad order cars and locomotives therefore is of pre-eminent importance.

And today, as in the past, the "Railway" organization offers valuable assistance to the railroads by delivering exactly the right locomotive and car springs which will speed up equipment building and repair programs and protect this equipment in service.

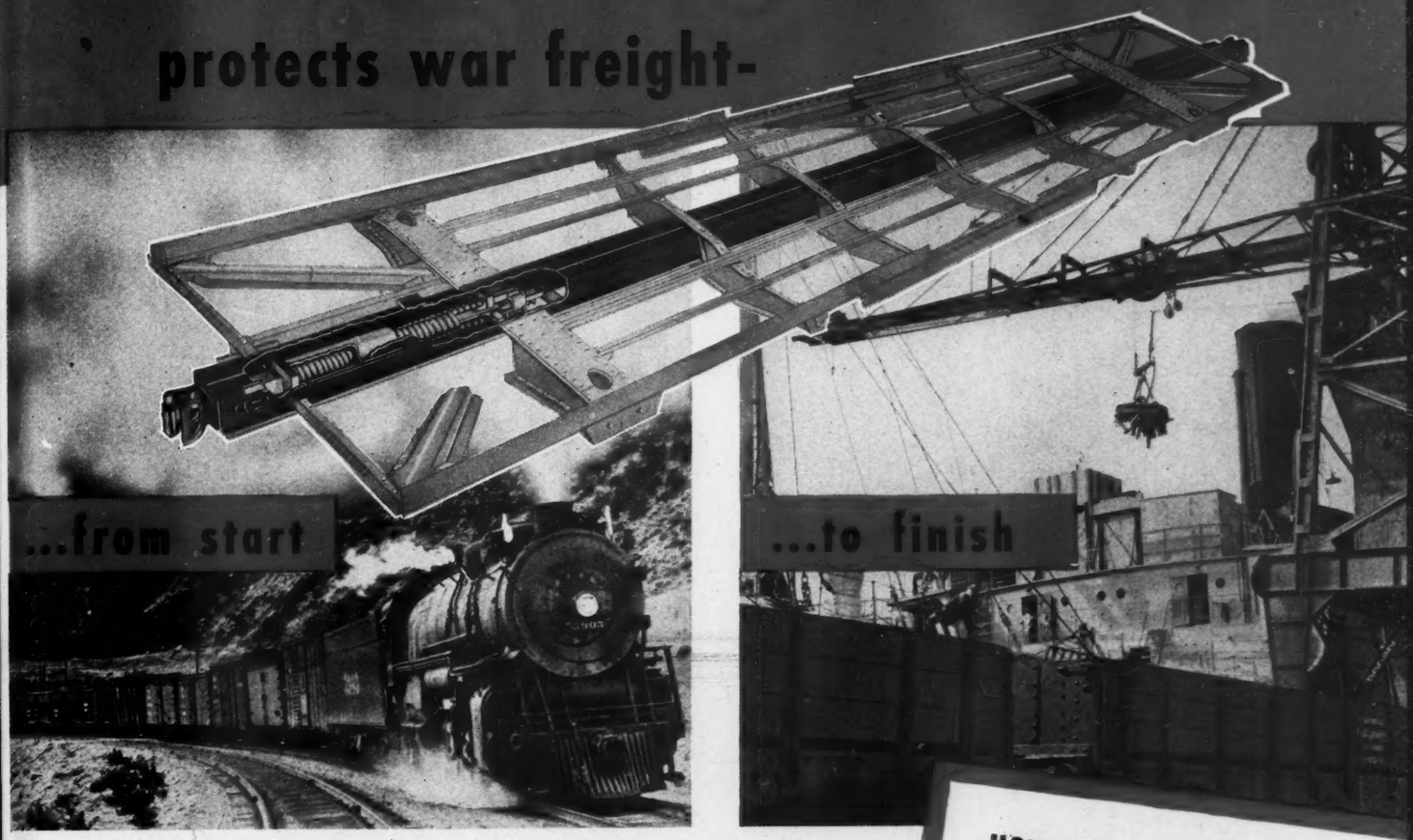
AMERICAN LOCOMOTIVE COMPANY

Railway Steel Spring Division

30 CHURCH STREET, NEW YORK. N. Y.

DURYEA *Cushion* UNDERFRAME

protects war freight-



Anywhere along the line, from loading platform to dockside, vital war shipments may get smacked. Heavier loads and faster schedules intensify the danger of damage to contents.

Fortunate is the shipper whose output travels via the Duryea-Cushioned Car. Floating the car body through each wallop, Duryea Gear gives 100% protection from shock.

Duryea...The Modern Safeguard

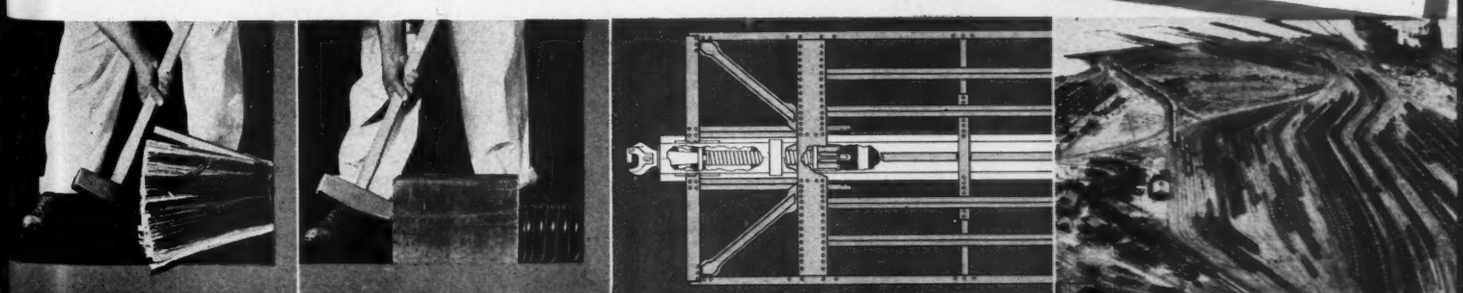
When unrestricted replacement of obsolete and worn-out cars is resumed, watch the swing to Duryea. This modern shockproof safeguard will be preferred by every railroad man and shipper who has seen how Duryea saves packing costs, maintenance, time and lading in war service! Plan for the future—investigate Duryea now.

Write for illustrated booklet

O. C. DURYEA CORPORATION
30 Rockefeller Plaza, New York, N.Y.
Field Building, Chicago, Ill.

HOW DURYEA CUSHIONING MEETS WAR NEEDS

1. Requires less packing and bracing, speeds up car loading and unloading.
2. Gives shockproof protection to vital war shipments.
3. Permits faster handling, higher speeds—Duryea-Cushioned Cars can "take it."
4. Avoids delays and tie-ups due to draft gear failure.
5. Reduces maintenance cost and time on every part of the car.
6. Reduces slack to pre-determined ideal. (Excessive slack is one big cause of damage in today's long, heavily loaded trains.)
7. Reduces cast steel required as compared with conventional friction draft gear underframe and draft gear replacements.
8. Keeps cars off the cripple track—keeps 'em rolling!



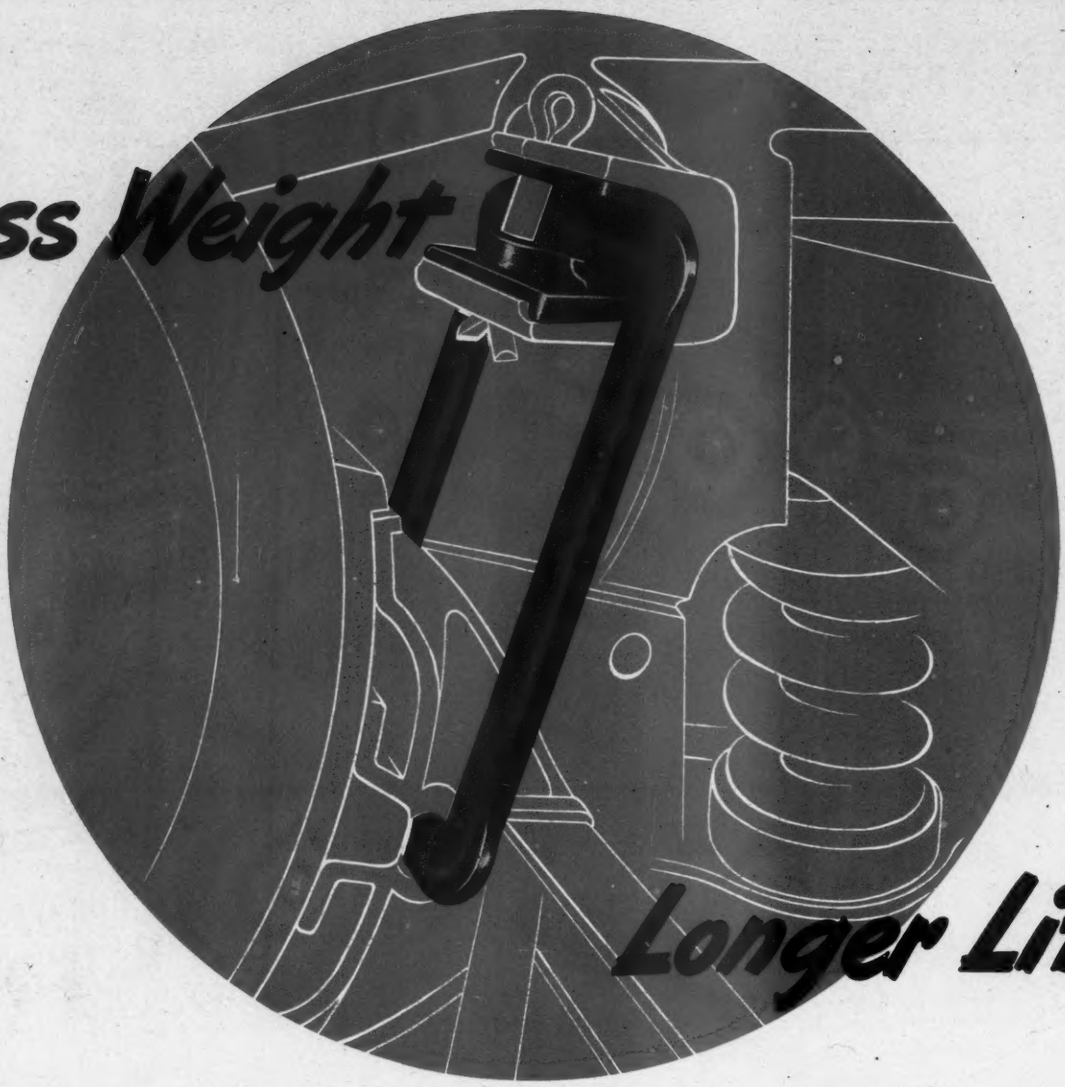
HOW DURYEA CUSHIONING lessens shock. Left: block of wood (sill) against wall will splinter when hit with sledge. Right: With spring allowing block (sill) to slide, the hardest blows won't cause damage.

PHANTOM VIEW shows floating center sills, huge springs that lessen blows. Duryea Cushion Gear lasts for life of car.

MR. RAILROAD OFFICIAL! Duryea Underframe can be supplied by any car builder—pays for itself quickly!

DURYEA *Cushion* UNDERFRAME FOR FREIGHT CARS

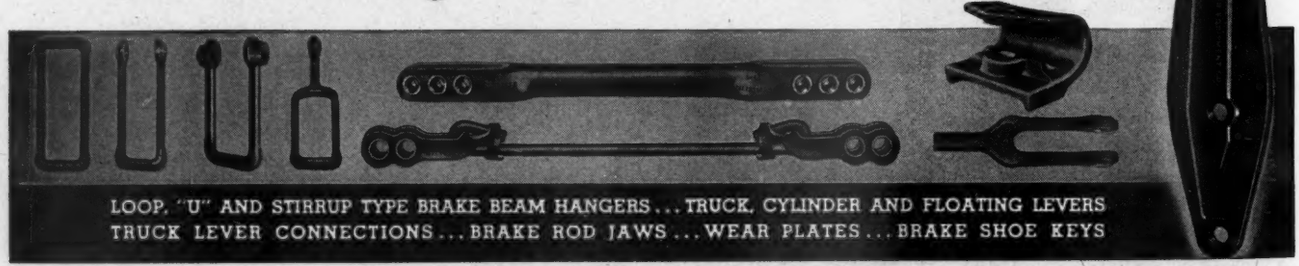
THE MODERN SAFEGUARD FOR SHOCKPROOF SHIPPING



"Man hours" today is a controlling factor in freight car performance. Schaefer appliances may be counted on to reduce materially the maintenance problem. A variety of Schaefer parts are in stock.

Schaefer EQUIPMENT COMPANY

KOPPERS BUILDING • PITTSBURGH, PA.



LOOP, "U" AND STIRRUP TYPE BRAKE BEAM HANGERS ... TRUCK, CYLINDER AND FLOATING LEVERS
TRUCK LEVER CONNECTIONS ... BRAKE ROD JAWS ... WEAR PLATES ... BRAKE SHOE KEYS

OXY-ACETYLENE FLAME-CLEANING

Makes Paint Go On Faster . . . Bond Tighter . . . and Last Longer

● Oxy-acetylene flame-cleaning preparatory to painting of bridges, tanks, cars, coaches, and many other types of steel structures is being used increasingly. This effective procedure quickly removes loose paint, scale, and rust from steel surfaces, and at the same time dries out surface moisture. After the steel has been flame-cleaned and then wire brushed, the protective coating spreads more evenly and quickly on the warm, dry surface, and a tighter bond is effected. As a result, the major causes of subsequent corrosion and paint flaking are eliminated.

THE OXWELD RAILROAD SERVICE COMPANY
Unit of Union Carbide and Carbon Corporation

UCC

Carbide and Carbon Building Chicago and New York

SINCE 1912—THE COMPLETE OXY-ACETYLENE SERVICE FOR AMERICAN RAILROADS

The word "Oxweld" is a registered trade-mark of a Unit of Union Carbide and Carbon Corporation.

Baldwin 1,000-hp. Diesel-Electric switching locomotive for the Terminal Railroad Association of St. Louis. Baldwin-built De La Verne, 8-cylinder, 4-cycle diesel engine, Westinghouse electrical transmission equipment.

Baldwin

TIME SAVERS

for the freight yards

Today, when America is depending more than ever upon its railroads to move men, raw materials and finished war products, there must be no delay in freight yards and terminals.

Baldwin Diesel-Electric switching locomotives are furnishing the answer to this problem in many railroad yards from coast to coast.

Baldwin Diesel-Electrics are engineered and built by specialists in the field of railway motive power, backed by 111 years of locomotive-building experience. These rugged locomotives have many advantages over steam switchers. They start faster and move away under smooth, even power. They operate with maximum availability. They consume less fuel, thus releasing badly needed cars for other service.

Baldwin diesel and steam locomotives are helping the railroads to haul the greatest tonnage in history. Baldwin tanks, guns and other implements of war are flowing, in ever increasing volume, to our Army and Navy.

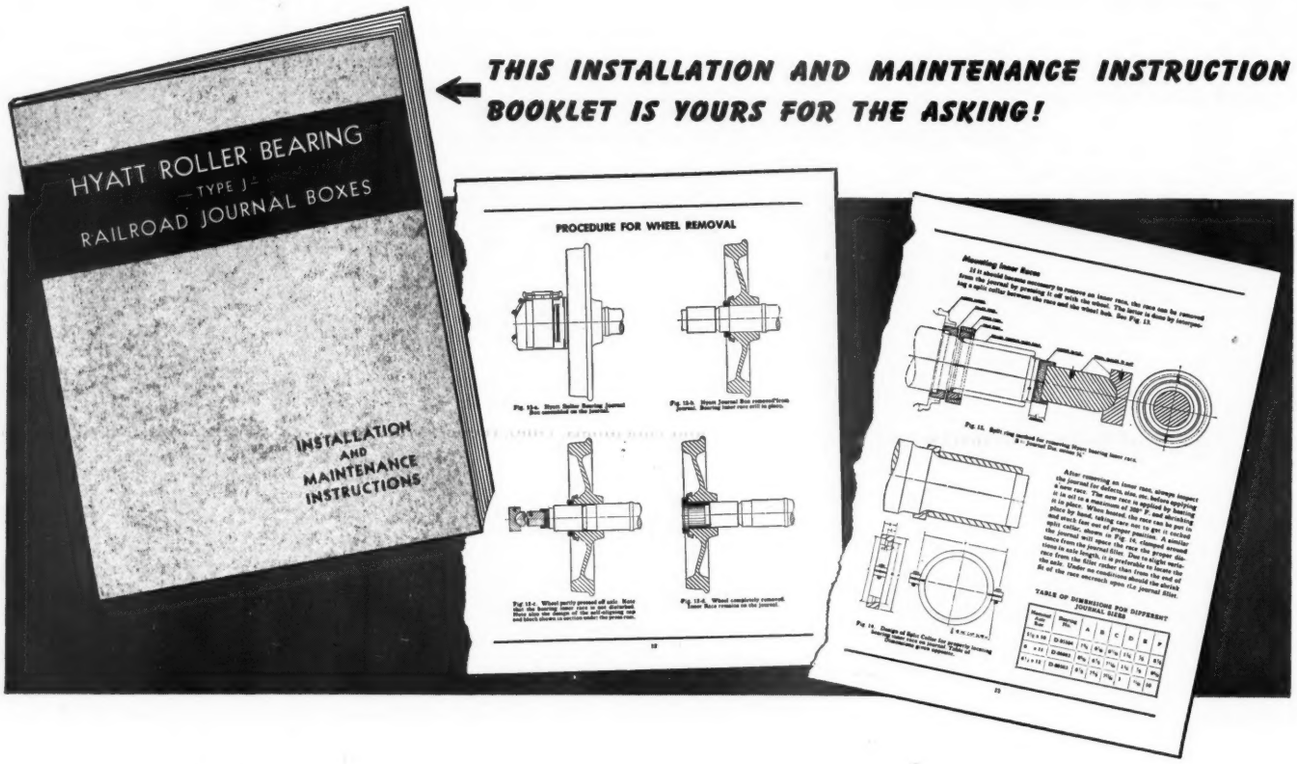
Baldwin Serves the Nation Which the Railroads Helped to Build

Baldwin 660-hp. Diesel-Electric switching locomotive for the Western Maryland Railway. Baldwin-built De La Vergne, 6-cylinder, 4-cycle diesel engine, Westinghouse electrical transmission equipment.

BLW THE BALDWIN GROUP

THE **BALDWIN** LOCOMOTIVE WORKS *Philadelphia*

CAREFUL MAINTENANCE WILL HELP CONSERVE YOUR HYATT ROLLER BEARING JOURNAL BOXES



THIS INSTALLATION AND MAINTENANCE INSTRUCTION BOOKLET IS YOURS FOR THE ASKING!

1 When does a journal box require lubrication?

2 What kind of oil should be used?

3 How much lateral clearance should a Hyatt journal box have?

4 How do you adjust lateral clearances?

5 When should bearings and boxes be inspected?

6 How much wear is permissible in box liners?

7 How are inner races removed from an axle?

8 How are inner races mounted and located?

9 Should bearing parts be kept together and why?

10 How should wheels be removed from roller bearing axles?

11 How should repair parts be ordered?

12 How are journal boxes taken apart?

13 How should spare parts be stored?

All these questions and more are answered in the above illustrated booklet. If you do not have a copy, send for it now. No obligation. Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

THE 50TH YEAR OF HYATT *ROLLER BEARINGS*

The Week at a Glance

LABOR AND INFLATION: There isn't anybody who needs more than the railroad employee to have the country avoid a large inflation in the price level. Runaway inflation, once it gets going, always runs too fast for the fastest wage increases to keep pace. Moreover, most railroad employees are counting heavily on their pensions to support them in their old age—and an honest-to-goodness inflation wouldn't leave a pensioner with enough money to buy tobacco, let alone anything else. An editorial herein cites these facts, which any modestly-informed person must know, and asks why, then, the paper "Labor" persistently snipes at people who are trying to prevent inflation. What kind of union journalism is it which attacks the people who are supporting policies in the obvious interest of union members?

●

ACCIDENTS: An editorial herein surveys the recent trend of train accidents, and the causes thereof—figures which suggest that a lot more accident-prevention effort, in a number of different directions, is needed; and needed now. Failure in employee selection and training and inadequate supervision seem to be the principal situations requiring drastic treatment. An upturn in accidents is, naturally, always unwelcome—but it must be doubly so when the carriers are so important a national reliance in waging a successful war.

●

STUDY BOARD REPORTS: One of the reasons why "our transportation problems" are largely unsolved—despite comprehensive regulation—is that carriers and localities complain of unequal and discriminatory treatment. Such is the statement of the Transport Study Board in its annual report, reviewed herein. In the '30's it looked like we had too much transportation, but it doesn't seem that way now. However, the Board admonishes, unless constructive action is now taken, "the old problems of surplus transportation capacity will probably return in intensified form after the war." The Board reveals itself in the midst of an inquiry of far wider scope than most people had suspected. It also is seeking a staggering quantity of information from the railroads.

●

CREDIT STILL LOW: The stock market shows what it thinks of the railroad investors' outlook, by the microscopic valuation it puts upon securities which reflect assets which never before were being employed so intensively and so necessarily in the public interest. What is the cause of this paradox? A well-known authority on railroad finance (Fairman R. Dick) examines the evidence in an article elsewhere in these pages—and, your reporter believes, he advances compelling arguments to sustain his contention that he has discovered the culprit.

●

CAPITALIZED EARNINGS: Mr. Dick shows the circular reasoning by which capitalization limited by earnings is defended. Earnings are, largely, controlled by the rate level which, in turn, is in the hands of the regulatory authorities. By depressing rates, they are able to achieve low earnings, which, in turn, they use as justification for reduced capitalization. This, later on (according to the views of some theorists), might be advanced as an argument for still lower rates; and still further reduction in capitalization, and so on till complete expropriation had been accomplished. What investor wants to put his money in an enterprise where principal can be, and threatens to be, wiped out by such hocus-pocus?

●

BETTER PASSENGER TRUCKS: Seven years of experimentation by the Chrysler Corporation—in co-operation with the Pennsylvania, the New York Central and the Pullman Company—has developed some notable improvements in the riding qualities of passenger car trucks. An article herein reports a portion of this inquiry, e. g., that having to do with the possibilities of getting smoother performance out of existing trucks. Fundamental in this research has been the application of instruments to trucks to reveal accurately the motions of their parts under varied operating conditions.

●

SAVING CARS AND TRUCKS: The railroads and the federal authorities ought to move in on abuses of the "no-bill" situation in the supply of mine cars. Such is the opinion of President Alvin Vogtle of the Association of Shippers' Advisory Boards in a speech reported herein. Mr. Vogtle also decries the allocation of tires to long-haul truckers, instead of to the short-haul jobs, which shippers really need. He believes there is room for improvement in use of railroad cars to and from military establishments.

●

THRIFTY WITH MATERIALS: More than 30,000 Missouri Pacific employees have signed a pledge to do their best to conserve materials, thereby contributing to the effectiveness of the war effort. The Booster Clubs on the railway are campaigning to the same effect—and suggestions (surprisingly good ones, too) are pouring in and are being put into effect. A brief article herein describes this campaign.

●

WHO IS COMPLACENT?: It isn't self-satisfaction on the part of railroad men which will cause the carriers to fail—if they do—to meet promptly all the jobs handed to them. Such was the observation of President Clarke of the A. R. E. A. in addressing the roadmasters' meeting, reported herein. If trouble comes, it will come from trying "to make bricks without straw"—and Mr. Clarke suggests rather pointedly wherein the trouble lies. It has been said that "supreme confidence" exists that the railroads will continue to do their job *"no matter what further restrictions are necessary."* It was not a railroad man who said that, nor is it railroad men who are taking the risks of "too little, too late" in transportation.

LEA ON THE RADIO: Transportation agencies should be judged—not just by their immediate convenience—but from the viewpoint of the ultimate good of the country. Thus Chairman Lea of the House Committee on Interstate Commerce advised in a radio address on September 24, reported herein. An industry as essential to the nation at war—as the railroads are—Mr. Lea warned, must also be sustained in peace time. Regulation, he insisted, should be based upon economic considerations—not on favoritism or expediency. On the same program, E. E. Norris surveyed the severe competition the railroads will face after the war, but, he predicted, the lessons the carriers are learning from the war (such as greater co-operation and improved efficiency) are "guaranteeing the future."

●

WAGE RUMBLINGS: The non-ops have been meeting in Chicago, and talking wages and inflation. Whether they will hit the roads for more money, they are not saying. The engine unions' wage and make-work proposals are in process of mediation. The unions have signified their acceptance of the short line emergency board report, giving them a 10-cents-an-hour increase with back-pay to December, last year. Where some of the roads involved in this case are going to find the money is something else again—but a mere nothing to the emergency board professors and to the union chiefs.

●

CTC BOOSTS CAPACITY: On 60.7 miles of single track between Richmond, Ind., and the suburbs of Cincinnati, centralized traffic control has accommodated an increase in daily trains from 15 to 26 (73 per cent), while getting the trains over the road much faster (and the trains now are longer, too). An illustrated article herein describes the installation.

●

LOADINGS LOSE MEANING: Use of carloadings is still far too persistent for the general good—since these figures have lost their significance, either as a measure of national production or of railroad performance. Continued use of these figures simply means that all but the wary are being misled into serious underestimates of the quantity of the nation's production and the intensity of railroad utilization. The leading editorial in this issue suggests that such misunderstanding may lead to grave miscalculations of the railways' needs for new equipment.

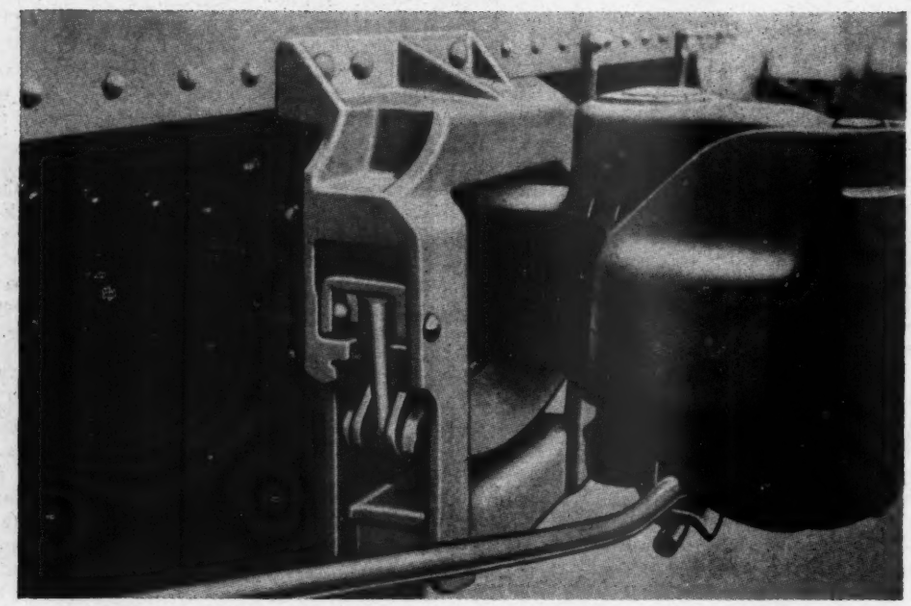
●

HENDERSON ON RATES: The OPA, in a submission by Leon Henderson, has injected itself into the Southern territory fare increase case, objecting to the projected rise from 1.65 to 2.2 cents a mile. As Alvin Vogtle says of OPA rate-making elsewhere in these pages: "They [the OPA] know nothing about this subject, but nonetheless they would follow their usual technique, issuing ill-considered orders of the most sweeping character and then obtain their education through the piteous pleas and anguished cries of the suffering victims."

ELIMINATE COUPLER SHANK WEAR

WITH

UNION SWING CARRY IRON CENTERING DEVICE



REDUCES NUMBER OF BROKEN COUPLER PARTS.

SEPARATE TRUNNION POCKETS TAKE ALL THE WEAR AWAY FROM THE STRIKING CASTINGS.

STANDARD RAILWAY EQUIPMENT MFG. COMPANY

HAMMOND, INDIANA

WORKS: HAMMOND, INDIANA — NEW KENSINGTON, PA.

CHICAGO OFFICE — 310 S. MICHIGAN AVE.

ONE OF THE WHYS OF PULLMAN-STANDARD QUALITY

As far back as 20 years ago Pullman adopted a suggestion plan in its long established manufacturing plants.

Immediately something new was added to all subsequent transportation units built by Pullman. It was an invisible something that did not appear in the specifications or drawings... but made itself evident in the quality of the products turned out.

It was the fruits of that oft-neglected element of manufacturing, the incentive to think, extended to the men in the shop, the fellows with the tools... to devise ways and means of improving the product and methods of manufacture and reducing shop hazards.

Notwithstanding sound engineering and design...and planned developments by the research staff... shop men have contributed a rising tide of workable ideas and usable suggestions. Each contributor has been rewarded in proportion to the merit of his suggestion. He often knows the problems of his own job better than anyone else. But it is the customer who obtains the extra intangible value that can be recognized in the quality of his purchase.

For many years customers of Pullman-Standard have enjoyed the fruits of this far-sighted policy. Into each manufactured unit have been built the rewarded ideas and suggestions of the shopman. The number now reaches well into the thousands.

With the reduction in equipment building and the rise in arms manufacture, it is Uncle Sam who is now benefiting by Pullman-Standard's incentive plan.

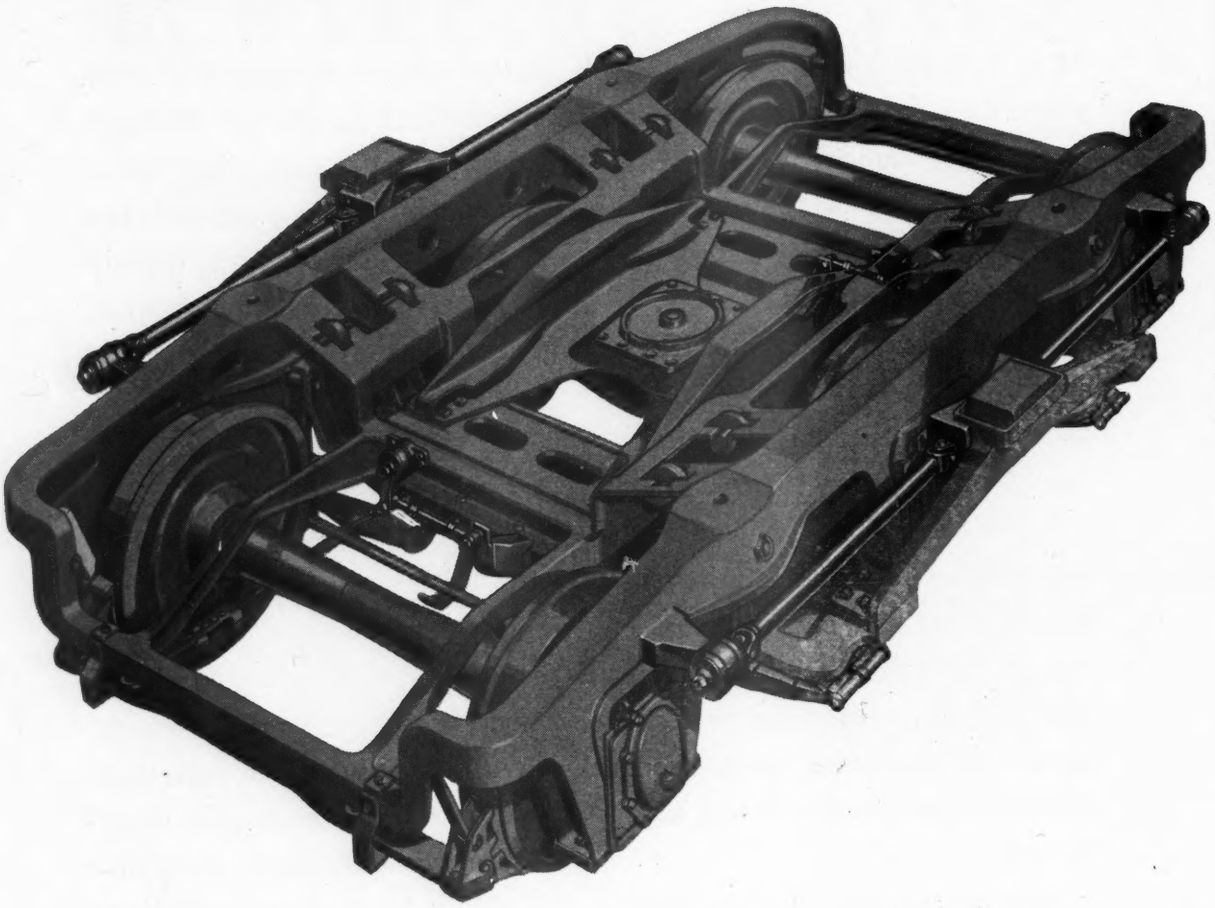
All employes contribute their ideas to the built-in quality of the products manufactured by Pullman-Standard.

PULLMAN-STANDARD CAR MANUFACTURING COMPANY

CHICAGO • NEW YORK • CLEVELAND • WASHINGTON, D. C. • PITTSBURGH • BALTIMORE • BIRMINGHAM • WORCESTER, MASS.

San Francisco Sales Representative: Latham McMullin

Announcing



HOUDE ENGINEERING DIVISION OF

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. . . *a New Development for* Greater Riding Comfort

THROUGH a combination of three new developments in design, brought about by intensive research and the close collaboration of the railway and automotive industries, has made possible a notable improvement in railway riding comfort.

Extensive road tests, in which new methods were employed to determine passenger car riding characteristics, have established an accurate measure of the improvements effected. Houdaille Hydraulic energy-absorbing instruments contribute importantly to the result.

The changes required can be readily incorporated in the present conventional types of trucks.

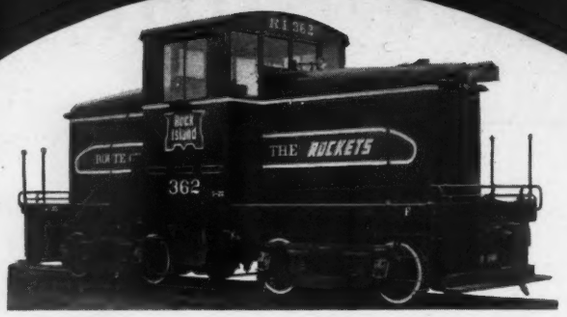
All equipment items included in this system are being marketed as a unit by E. A. Lundy Inc., 420 Lexington Avenue, New York, N. Y.

HERSHEY CORPORATION DETROIT, MICH.

They Wear No Medals for Valour

BUT

They are Serving Mightily



The WASTE of OVER-POWER

Should be SHUNNED in War and in the Peace to Follow

The Lighter Switcher, in the form of Davenport's 44 Ton Diesel-Electric, ushered in a new era in railroad economy. The foresight of Davenport designers has been magnificently confirmed in this period when railroad facilities are under the heaviest burden in history and the need for additional locomotives and freight cars is acute.

The many Davenport lighter switchers now in service are creating major operating savings on many locations where more costly, less efficient or over-powered steamers had been employed. More, they have released the larger steam switchers for duty elsewhere. In many quarters the regret is felt that there are not many more Davenport Lighter Switchers in use on duties for which they have proven their outstanding worth.

Those practical railroad men who operate Davenports, and those who are interested in the economies effected by them, KNOW that the lighter switchers fill an important spot in railroad practices—and that their value will be multiplied in the railroad economy of the future when VICTORY PEACE opens up vast expanses of human opportunity.

May We Suggest—

That you feel free at all times to call upon our Davenport Organization for any information required to further your understanding of the advantages of the lighter Diesel locomotives for your road. Every courtesy will be extended to you at all times by our entire personnel.

DAVENPORT LOCOMOTIVES are IN this WAR

Our workers are proud of the steady stream of Better-Built Davenports leaving our shops to perform tirelessly on the vital services of construction, production, and transportation for the United Nations, here and abroad, where gallant men are writing epics and VICTORY stirs in the womb of Freedom.

DAVENPORT LOCOMOTIVE WORKS

A DIVISION OF DAVENPORT BESLER CORPORATION, DAVENPORT, IOWA

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Twin-Bulb ELECTRIC LANTERN
GETS THE CALL

Because war railroading demands the utmost in efficiency.

Check These Superior JUSTRITE Advantages

- *662 candle power forward beam—110 car length visibility. Light to the sides from the same bulb at the same time.*
- *Power to cut through smoke and fog.*
- *Car numbers quickly and accurately read, even at a distance.*
- *Twin-Bulbs — if one burns out, flip the switch and the second bulb lights instantly.*
- *Space for two spares in the lid.*
- *Constructed for easy replacement of any part.*
- *Sturdily built for years of trouble-free service.*

• *Write today for full details and prices.*

No wonder thousands of trainmen are using Justrite Twin-Bulb Lanterns to highball our war goods across the country

JUSTRITE MANUFACTURING CO.
2086 Southport Ave., Chicago, Ill.

JUSTRITE *Safety Products*

SAFETY CANS · FILLING CANS · OILY WASTE CANS
APPROVED SAFETY ELECTRIC LANTERNS

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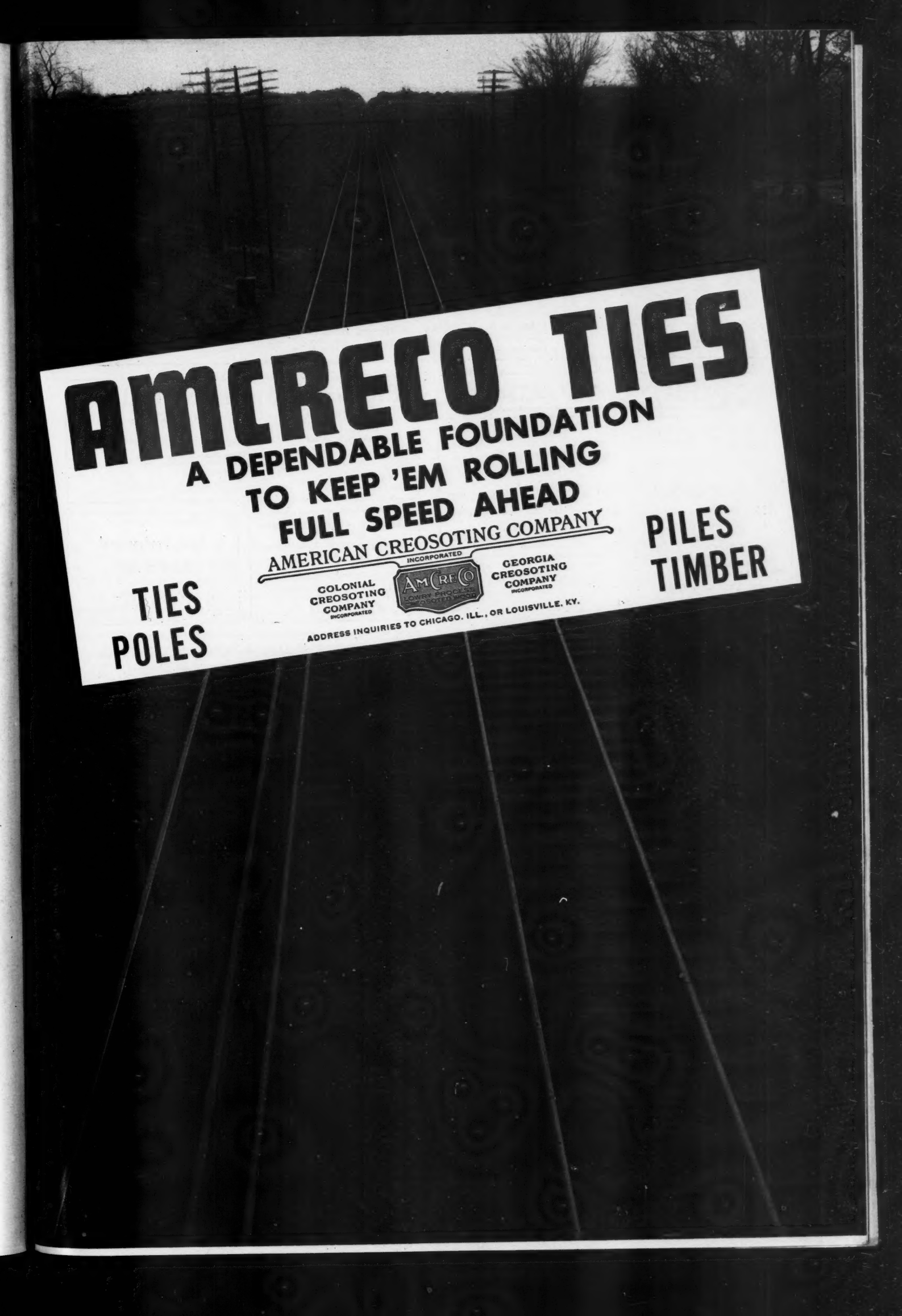
in over three-quarters of a century of *continuous production*, has spun out a record of performance that is *unequalled* in the history of insulated wires and cables
THE KERITE INSULATED WIRE & CABLE COMPANY INC
NEW YORK CHICAGO SAN FRANCISCO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A DEPENDABLE FOUNDATION
TO KEEP 'EM ROLLING
FULL SPEED AHEAD
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FOR SALE

We offer 523 all-steel, self-clearing DOUBLE HOPPER CARS consisting of:
160 USRA construction; built 1921-22; with A-B Brakes, 1880 cubical feet capacity.
363 built 1910-1915; with KD-1012 brakes, 1683 feet capacity.
ALL HAVE FULL "U" CAST STEEL TRUCK FRAMES.
Purchaser must buy all.
PRICE: $1700.00 each f.o.t. Pennsylvania
TERMS: Cash with purchase.
DELIVERY CAN COMMENCE IMMEDIATELY AND BE COMPLETED IN ABOUT 60 DAYS — AND VERY POSSIBLY SOONER
Some $30,000 to $40,000 NEW REPAIR MATERIALS also available which you may wish to have inspected at the same time.
TIME and EXPEDITION ESSENTIAL and DESIRABLE.
Yours for Victory,
IRON & STEEL PRODUCTS, INC.
37 *years' experience*
13486 S. Brainard Ave., Chicago, Illinois
"ANYTHING containing IRON or STEEL"

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EDUCATIONAL

Educational Services for RAILROAD MEN

Maintenance of Way—
Mechanical—
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All Supervisors—

The Railway Educational Bureau
Omaha, Nebraska

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A fine opportunity is offered by one of the large corporations of the country to a highly qualified sales representative selling to railroads.

To qualify the man should have acquaintance among railroad executives, knowledge of railroad operation, and ability to present sales story convincingly to operating officials. Technical background would help.

Position offers attractive future to man of ability, who is willing to work hard.

Write fully giving complete facts of age, education, experience, salary expected and draft status.

Address Box 584
RAILWAY AGE
30 Church Street, New York, N. Y.

WANT TO PURCHASE

4 inch O. D. boiler tubes; steel pipe of all sizes; Industrial plants; mills; railroads; trackage; etc.

WRITE, WIRE OR PHONE
SONKEN-GALAMBA CORP.
108 N. 2d St. Kansas City, Kans.
We buy and sell.
Get our quotations.

AT BIG SAVINGS

Locomotives, railroad equipment and accessories; machinery; boilers; motors; engines and other equipment. Write, wire or phone for prices.

Sonken-Galamba Corp.
108 N. 2nd St. Kansas City, Kans.

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RAILROADS!
What will your older ones earn, net, while the War lasts?
What after the War?
What will they be worth then—only Scrap price?
Consider, then, their abnormal worth today?

You may realize *today*—
"Returns" of next several years!
Present book carriage!
Appreciable profit *additionally!*
Ordinarily, any one of these three features is considered satisfactory realization!
You would, also, amortize now replacement later with new and modern cars from the avoidance and saving of present excessive maintenance costs, the profit and accumulated interim interest, etc., etc.!

WANTED FOR DEFENSE USAGE
Obtain our quotation without obligation.
IRON & STEEL PRODUCTS, INC.
37 *years' experience*
13486 S. Brainard Ave., Chicago, Ill.

FOR SALE

Bettendorf Company's Entire Stock Purchased By Us—
NEW CAR PARTS:
Truck Side Frames
Bolsters
Center Sill Ends
Draft Lugs
Center Sill Filler and Center Plate Supports
Journal Bearing Wedges
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Spring Plank Plates
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Etc.
Write for detailed list or send us inquiries to cover your requirements.
IRON & STEEL PRODUCTS, INC.
37 *years' experience*
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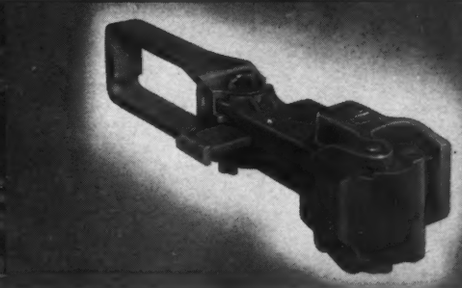

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